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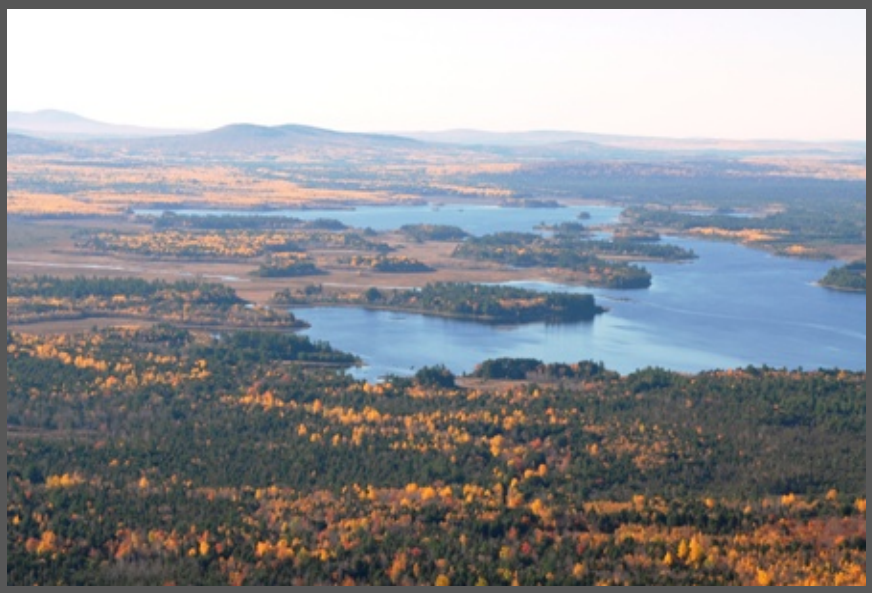
SPACE AND PLACE IN REGIONAL CONSERVATION



Middlebury College ENVS 0401 | Spring 2013
In conjunction with
The Nature Conservancy of Canada and
The Vermont Chapter of The Nature Conservancy

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EXECUTIVE SUMMARY

· This report describes the results of a research-based initiative launched by a group of six Middlebury College students in the Environmental Studies Senior Seminar course in conjunction with the Vermont Chapter of The Nature Conservancy (TNC) and the Nature Conservancy of Canada (NCC) throughout the Spring of 2013.

· The project sought to investigate people's relationships with the natural environment in the Northern Appalachian/Acadian Ecoregion (NAAE), focusing on the Vermont/Québec border area.

· We had four major objectives in this study. The first was to understand people's relationships with the environment. The second was to determine the scale at which residents care about environmental conservation. The third was to evaluate demographic factors that could account for differences in levels of environmental concern. The fourth was to make recommendations for our community partners.

· This study involved the creation and distribution of a survey, as well as a series of interviews. These two methods enabled the collection of both qualitative and quantitative information in order to understand the diversity of the individuals within the region. From our survey we received 232 electronic responses and 20 paper responses. Due to time constraints, however, we only analyzed 224 of the electronic surveys.

· Our results suggest a number of things about people in this region and their environmental beliefs. The survey results, as well as the interviews, support the assertion that people from this region are generally very supportive of environmental beliefs and behaviors. While a number of more specific findings are very illuminating (such as an increasing sense of connection to place with increasing age or that the more educated people are, the more they think conservation initiatives should be a priority) our results ultimately demonstrate a broader picture of the environmental attitudes of the surveyed communities.

· We suggest that our community partners use the information gathered in our project to better promote their conservation initiatives. We suggest that they focus on expanding their membership base by avoiding themes of place-based identification and instead focusing on outdoor activities with younger generations; that they increase educational outreach to high-income individuals; and that they think about framing their initiatives in different ways depending on their target areas. These are but a few of our full list of recommendations. Ultimately, this report demonstrates that flexibility and ingenuity will be necessary to truly understand relationships to the environment and to re-frame and re-focus conservation initiatives towards that greater understanding.

1. INTRODUCTION

1.1 Project Context

The main goal of this project was to understand how residents of varying demographics and identities perceive and relate to their surrounding natural environments across national, cultural, and linguistic borders. Understanding these relationships might prove to be of great importance to the environmental movement in the area. Our group partnered with the Vermont Chapter of The Nature Conservancy (TNC) and the Nature Conservancy of Canada (NCC) for the purpose of further understanding and exploring this topic. These community partners initially approached us with a general interest in understanding the variety of relationships to the environment as they are practiced and perceived among residents of the Northern Appalachian/Acadian Ecoregion (NAAE). TNC and NCC wish to bolster their knowledge of individual perceptions of space and identities with place and the environment to increase their member-base and expand the diversity of individuals that will engage with future initiatives. Our group undertook this task primarily through the creation and distribution of a survey, as well as through a series of semi-structured interviews.

1.2 The Northern Appalachian/Acadian Ecoregion

Geographic Context

The NAAE extends across parts of New York, Vermont, New Hampshire, Maine, and into Canada, including Québec, New Brunswick, Prince Edward Island, and Nova Scotia. This includes the Tug Hill and Adirondack Mountains (NY), the Green Mountains (VT), the White Mountains (NH), and parts of Maine and Maritime Canada (Figure 1) (Trombulak et al. 2008). Given time and logistical constraints, the region that we have focused on for the purpose of this project is a smaller, more specific portion of the ecoregion located on the border of Northern Vermont and Southern Québec (Figure 2). Our area of focus also includes places adjacent to, but not within, the NAAE because inhabitants from these adjacent areas use the ecoregion as a place for recreation and thus have a stake in its conservation. The NAAE is unique in that it crosses several boundaries: not only political boundaries across states and nations, but also environmental boundaries across different biomes. The NAAE is considered a

The four main objectives of this project were to:

1. Develop and implement survey strategies to map Vermont and Québec residents' relationships with and attitudes toward the environment based on regional issues and common activities through which many people in this region are active in their environment.

2. Evaluate the survey to determine the scale at which residents care about environmental conservation.

3. Evaluate demographic factors that could account for differences in survey results, such as whether people live in Vermont or Québec, whether they live in cities or in rural areas, as well as their age, ethnicity, and income.

4. Make recommendations for the scale and focus of conservation priorities based on findings.

transitional zone consisting of temperate southern and boreal northern conditions and both boreal and deciduous forests (ibid.). Furthermore, the region contains over 68,000 miles of rivers and streams and more than 8,000 lakes and ponds, covering over a million acres of land (ibid.). It should be clear that the NAAE is extremely diverse in its ecological composition; as such it is of great interest to understand more about its residents since their relationship with the environment often dictates natural impacts.

Biodiversity

The diversity within the NAAE further extends into the flora and fauna found within this region. Regions such as the Gaspé Peninsula, located near the Gulf of St. Lawrence, and other higher elevation areas, support species of flora and fauna that are more representative of northern taiga regions (ibid.). As the elevation declines, however, a shift occurs in the general composition of the forest: higher concentrations of northern hardwood and conifer species (among which include red spruce, balsam fir, yellow birch, sugar maple, red oak, red maple, American beech, red and eastern white pine, and eastern hemlock) indicate a transition into the Acadian forest. The region also contains 14 species of conifers, the most for any ecoregion within such a habitat type (ibid.).

In addition to this range of forest types, there are a variety of other ecosystems present in the NAAE. For example, a host of aquatic, wetland, riparian, and coastal regions, including floodplains; marshes; estuaries; bogs; ferns; peatlands; tracts of cobble, sand, and barrier beaches; coastal marshes and tidal mudflats; and headlands, ravines, and coastal forests exist throughout the region as well (ibid.).

When it comes to fauna, the NAAE is considered to be one of the 20 richest ecoregions throughout the continental US and Canada. There are 148 rare endemics, or species that only exist in this region, and it is accepted as the second richest ecoregion classified under the category of temperate broadleaf and mixed forest types (ibid.).

This ecoregion features prominently moose, black bears, red foxes, snowshoe hares, porcupines, fishers, beavers, bobcats, Canada lynxes, American martens, muskrats, and raccoons; however, these species tend to be more prolific in the northern latitudes (ibid.).

Human Populations

While the northeastern part of the United States is considered by Americans to be extremely rural, the southeastern part of Québec is one of Canada's most urban regions (ibid.). This dichotomy is further proven by the fact that our focus area (Figure 2) includes two Canadian urban centers, Montréal and Sherbrooke, and yet the largest urban center of Vermont is Burlington.

Montréal is a city of more than 1.5 million people (almost three times the population of the state of Vermont), and has a city area of more than 150 square miles, or 430 square kilometers (Statistics Canada 2011). Sherbrooke, about 100 miles east of Montréal, is populated by over 150,000 people and has an area of around 140 square miles, or 365 square kilometers (ibid.). By comparison, Burlington, Vermont, the state's most populated urban center, has a population of just over 42,000 people and an area of 15 square miles, or 40 square kilometers (United States Census Bureau 2010). We expected this contrast in relative size to influence these residents' perceptions of the ecoregion in question.

Environmental attitudes and perceptions will most likely be influenced by the cultural differences between residents of Québec and Vermont. Within this region, our project aimed to take these demographic factors—such as being a rural or urban resident—into account in order to understand how residents perceive and relate to the environment. Based on our findings we make recommendations regarding how our results might allow for broad-based applications in regional conservation initiatives. It is our hope that the findings and methods used for this study will be useful to TNC and NCC as a means of understanding whether or not people living within this ecoregion have any shared sense of place. Further, we hope that our community partners will use these findings as a model to learn more about new regions and issues in the future.

Figure 1. The Northern Apalachian/Acadian Ecoregion (Trombulak et al. 2008).

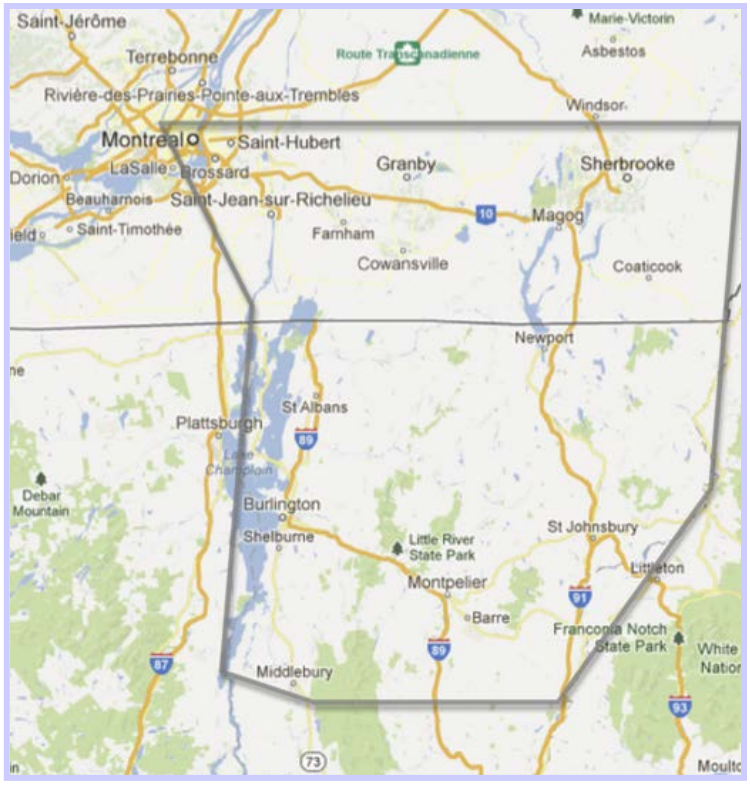


Figure 2. The specific geographic area of focus.

2. LITERATURE REVIEW

This project spans six areas of study, and, therefore, six distinct bodies of literature. First, we review literature that recounts the history and past policies throughout the region in order to understand previous conflicts and resolutions between the governing bodies in question (Blaser et al. 2004; Pritzker 1999; Slowe 1991). We then go on to explore the literature that studies the overarching environmental attitudes to which individuals generally subscribe (Gutfeld 1991; Kortenkamp & Moore 2001; Lipsey 1977; Merchant 1992; Nash 1989; Stem et al. 1993; Stern & Dietz 1994; Thompson & Barton 1994; Tracey & Oskamp 1983). Third, we discuss literature that adopts a more critical lens in analyzing environmental initiatives in order to ground the work of conservation organizations in the realities of various limitations and obstacles (Bertolas 2010; Meyer 1997; Pasqualetti 2011; Rothenberg 2002; Smith 2001; Woods 2003). The fourth body of literature encompasses ideas about how individuals create a sense of place, how they define that place, and how identity is constructed through the varying scales of place with which people connect (Cantrill & Senecah 2001; Convery et al. 2012; Cosgrove 2004; Teo & Huang 1996; Tuan 1975). The fifth area of research we explore discusses interest group formation to connect the findings of our survey with actions our partner organizations can take in order to garner support for their conservation projects (Bevington 2009; Bosso 2005; Lewis 1995; Salisbury 1969). The sixth and final body of literature looks into analogous cases in other areas of the globe in order to gain an understanding of how other organizations have dealt with similar transboundary conservation initiatives and to contextualize the purpose behind our survey and its ability to aid TNC and NCC in their respective endeavors (Jones 2004; Muller-Boker and Kollmair 2000).

2.1 History and Past Policies in the Region

> *"We did not create the world we are living in. we are supposed to take care of it while it is our turn and pass it on to future generations."*
>
> *-Chris Bray*

Our project specifically looks into the relationship between Vermont and Québec to understand how individuals characterize their identity in the NAAE, whether it is via the political boundary that defines them or another attribute. The boundary between Québec and Vermont was first demarcated by the British between 1771 and 1774, and has never been militarily defended (Slowe 1991). Economically, the Free Trade Agreement between Canada and the United States increased Québec's consumption of American goods, which was in turn detrimental to the retail sector of Québec, but simultaneously beneficial to Vermont's economy (ibid.). Another agreement between the federal governments of US and Canada devastated the softwood lumber sawmills in Québec, as the Canadian Government added new taxes on forest industries and new restrictions on the export of unprocessed or partially processed lumber.

Environmentally, the flooding of River Richelieu in the early 1970s caused a dispute between Quebecers and Vermonters over the damming of the river, but the outcry from environmentalists in the United States and the lobbying by the Lake Champlain Committee resulted in no tangible progress over the next 20 years (ibid.). The management of Lake Mephremagog has also been the center of international disputes. In the late 1980s, Vermont and Québec signed the Environmental Cooperation

Agreement on Managing the Waters of Lake Mephremagog, which established the Québec-Vermont Working Group on Managing Lake Mephremagog and its Environment to address the eutrophication and pollution problems in the lake. This time, the conservationists felt the encumbrance of borderland bureaucracy, as the environmental problems at Mephremagog continued to be unsolved. In the 1990s, hydroelectricity trade between Vermont and Hydro Québec (HQ) also entangled Vermont in a dispute between the Cree and HQ over the damming of rivers in the James Bay area (Pritzker 1999; Blaser et al. 2004). In 2013, the two jurisdictions signed the Cooperation Agreement Between the Government of the State of Vermont and the Gouvernement du Qúebec that touched on hydroelectricity and improved management of Lake Champlain and Lake Memphremagog.

Culturally, the Commission Mixte actively promoted cultural exchange between Vermont and Québec and despite political disputes over Lake Champlain and Lake Mephremagog, the border people remain on good terms (Slowe 1991). Despite some disagreements between the two territories, overall, there is a possibility for cultivating a sense of identity based on natural boundaries rather than political ones.

> *"My conversations with Canadians made it clear that we have a border that needs to be seen not as a barrier but as a link to the unified ecosystem, whether it is the air pollutants that come across the continent, or other kinds of social, economic, historical, or commercial ties that we share."*
>
> *-Jim Douglas*

2.2 Environmental Attitudes

Our project aims to deconstruct people's relationships with the natural environment in order to gain a deeper insight into the underlying motivations for individual actions and awareness around conservation goals. Existing literature regarding individuals' attitudes toward the natural environment suggests that there are two broad possibilities: a) feeling apathetic or antagonistic toward the environment, or b) feeling positively toward the environment and, consequently, feeling concern for it (Thompson & Barton 1994).

Various studies have shown that widespread concern for the environment exists in the United States. In one national sample done by Gutfeld (1991), as many as 80% of respondents identified themselves as "Environmentalists." Further, this study found that people expressed a willingness to make lifestyle changes to protect the environment, even if these changes might induce inconvenience or personal economic cost. This general concern for the environment, however, was not found to be effectively translated into conservation action (Lipsey 1977; Tracey & Oskamp 1983). Through our survey, we hope to understand the way sentiments manifest into actions at a more localized level with transboundary dynamics.

This inconsistency between people who show a concern for their environment but do not necessarily participate in conservation actions and people who show a concern for their environment and *do* participate in conservation actions can be explained by the motifs behind each individual's concern. Two broad motifs have been identified: anthropocentrism and ecocentrism (Thompson & Barton 1994; Kortenkamp & Moore 2001). Anthropocentrics value nature because of the positive effects it can have on human life. Ecocentrics agree with anthropocentrics in this matter but believe that all life has intrinsic value and thus, even if it had negative or no effect on human life, it should still be protected (Nash 1989;

Thompson & Barton 1994; Kortenkamp & Moore 2001). Stern & Dietz (1994) explain this difference through the scope of environmental justice. Some believe that we should use the environment in a way that serves justice for human beings (anthropocentrism); others believe we should use it in a way that is just to non-human objects such as ecosystems, biospheres, or even the organisms that occupy these environments (ecocentrism).

Many other attitudes underlying environmental concern have been identified, most of which fit into the two categories mentioned above. Spiritualism, for instance, fits into the ecocentric category since it ascribes nature a value of its own, even if that value enriches the human spirit (Thompson & Barton 1994). Additionally, anthropocentrism encompasses both instrumentalism and utilitarianism since both of these attitudes think of the environment as a means towards bettering human life.

Furthermore, Carolyn Merchant (1992) connects environmental concern to three objects: other people, non-human objects, and the self. She describes three ethics to follow these objects: homocentric, ecocentric, and egocentric. Similarly Stem, Dietz, and Kalof (1993) developed three orientations that parallel Merchant's ethics. These are the social-altruistic orientation, biospheric orientation, and egoistic orientation. Even these can be linked back to anthropocentrism and ecocentrism: two of them (social-altruistic and egoistic) express concern for the welfare of human beings and the other (biospheric) shows concern for non-human objects. This level of analysis, however, differentiates between concern for the self and concern for other people.

This deconstruction of attitudes toward the environment can help us better understand why people may or may not be interested in various conservation initiatives. For example, a utilitarian might not be so willing to cooperate with a conservation initiative that seeks to conserve the beauty of our environment but might be very willing to participate if it means we will be able to have better quality materials. Thus, as we designed our survey, we sought to ask questions focused on identifying these various attitudes and attempted to understand the relationship between belief and action.

> *"When spring comes in VT, when the ground is hard and brown and you go on that walk in the woods and you see the tiny little leaf of a trout lily pushing up through that hardness, you think, 'this is a really strong force.'"*
>
> *-Andrea Murray*

2.3 Approaching Natural Stewardship from Multiple Angles

In approaching our project, we were also interested in understanding what a person who "cares about the environment" looks like—what type of perspectives does this person have regarding nature, the outdoors, or preservation? There is certainly a broad range of interpretations of even the most basic environmental terms—e.g. "nature"—but understanding the motivations behind "care for the environment" is critical to our project and to our community partners since different interpretations can yield different outcomes.

When it comes to the protection of the natural environment, there are generally two prevailing ideologies: preservation and conservation. Preservation is defined as the stewardship of nature for the purpose of maintaining its intrinsic existence value, and from this perspective, humans and nature are clearly distinct. The delimitation of such ideological distance has historically encouraged a romanticized view of nature, as exemplified by the work of preservationists such as John Muir, an instrumental figure in the creation of the national park system (Rothenberg 2002). Conservation, on the other hand, is

defined as a utilitarian adaptation of preservation insomuch as it allows for the inclusion of sustainable human activity in definitions of the natural environment. Champions of conservation have argued that nature is fit for anthropogenic use so long as it does not forfeit environmental vitality over the long term (Meyer 1997).

This cursory distinction between preservation and conservation can only begin to capture the breadth of possible attitudes regarding the natural environment; to a certain extent the two assume some degree of ecological ethic, a presumption that perhaps unfairly projects environmental attitudes onto the general public. For our project we have adopted a more neutral approach in our distribution of an objective survey. This approach was based on the expectation that people's opinions about the surrounding natural environment will contain a degree of complexity, an important consideration as homogeneity is rarely effective when it comes to conservation initiatives.

> *"In my lifetime and my kid's lifetime, things are changing dramatically."*
>
> *-Elise Annes*

How residents relate to their place is addressed directly by Bertolas (2010) in his piece entitled *Cross-Cultural Environmental Perception of Wilderness*. In this article, the author analyzes the influence of place in human-nature interactions using Vermonters, non-native Quebecers, and First Nation Cree as his primary informants. He finds that when it comes to the relationship between each of these different demographics and "wilderness," there are indeed differences in how each group interprets and perceives this idea. While all three groups consider wilderness to be pure and pollution-free, they diverge in that Vermonters consider wilderness to be an unmodified and uninhabited space, non-native Quebecers ascribe wilderness an almost anthropomorphic utility, and the native Cree consider themselves to be one with wilderness insofar as they live "in" it. Further, when asked about their thoughts on the prospects for the existence of wilderness 100 years from now, Vermonters were cautiously optimistic, Quebecers were very optimistic, and Cree were pessimistic.

From this discussion emerges the notion that definitions of "nature," "wilderness" and other related terms are both highly contextual and dependent on individuals, locations, and constructed cultural meanings. This is not to say, however, that the quest for a better understanding of how people relate to their surrounding environment is necessarily futile. Instead, gaining a better understanding of such complexity and cultural differences serves as an important barometer of success, particularly as our group attempts to assess how residents of Vermont and Québec perceive space and place in the NAAE.

Interestingly, tourism is one such way that residents use and connect with the environment. Though rarely critically examined, according to Smith (2001), tourism oriented toward enjoyment of and education about nature is actually both incongruous and problematic. This is to say that implicitly advocating for nature's stewardship whilst "consuming" it is paradoxical for the consumptive ideals such "environmental" action promotes. Indeed, in Smith's words, "We 'get back to nature' by driving on the interstate or flying in a plane and then using the latest high-tech outdoor gear" (ibid.:123). It is difficult to deny the hypocrisy inherent in such activities. Given the undeniable subscription by the increasingly populated developed world to a resource-driven market economy, the question of nature's perceived utility as it relates to both the preservation/conservation dynamic and tourism merits further consideration.

> *"I want these things to be around for my children and my children's children.*
>
> *-Andrea Murray*

A Welsh community's debate about a prospective wind farm development project serves as a useful example to illuminate the aforementioned idea. In his article about competing notions of "rural," Woods (2003) highlights one community's rift over the prospect of local wind development. For those in favor of the project's realization, wind development offered the possibility of sustainable development, or utilitarian conservation. Opponents, however, were keen to point out that wind development's visual effects on the landscape would deter tourism and thus hurt the local economy. Woods characterizes this dichotomy as one between a conception of rural as a productive space and rural as a place of consumption, aligning respectively with the ideologies of preservation and conservation.

In the end, the wind project was approved by the local planning authority following bitter debate by both advocates and critics. In his analysis, Woods simplifies this case to a battle between science (pro-wind development) and emotion (anti-wind development), with science having clearly taken precedence.

In light of this distinction, it is worth noting certain possible rationalizations, elucidated by Pasqualetti (2011), for such opposition. In his article about opposition to wind development, this scholar outlines five potentially problematic influences of such projects: interference with visual aesthetics, radar operations, property values, tourist attractions, and a sense of serenity. Although Woods' article (2003) demonstrates that wind projects are generally considered to be scientifically sound and beneficial undertakings, Pasqualetti illuminates that local development and local benefit are not always mutually inclusive. In other words, though from a broader environmental perspective wind development may make the most sense as a step toward moving the energy economy away from fossil fuels, such general benefits are not always accessible or appreciable to the communities directly affected.

What follows, then, is Pasqualetti's suggestion of five core issues related to wind development, and more broadly, conservation initiatives:

> The first core issue is immobility. Wind energy is site specific and must adjust to existing natural, cultural, and social conditions within a very narrow range of spatial options. […] The second core issue is immutability. It is part of the human condition to believe that the landscapes with which we are most familiar, those that provide both our livelihoods and our greatest comfort, will not change over time. […] The third core issue is solidarity. Knowing the intensity of the landscape changes that wind projects produce, development planning should integrate deeper understanding of the ties between land and life. […] The fourth core issue is imposition. It stems from the belief that such wind projects are someone else's idea, for someone else's benefit, and for someone else's profit. […] The fifth core issue is place. Wind energy projects, more than most others, are considered threats to place identity... (2011:914-5).

The description of these five issues constructively nuances and complicates the discussion of such projects, be they related to wind development or the types of conservation initiatives pursued by TNC and NCC. As the author's descriptions of the five issues (immobility, immutability, solidarity, imposition, and place) conveys, conservation must include local, community-related considerations in addition to the salient environmental considerations. Without a healthy balance, the end result will be skewed.

There are numerous schools of thought and means of approaching natural stewardship: conservation, preservation, and tourism/environmental education are only a few. Ultimately, every approach requires grounding in the understanding that many residents, particularly those in the North Appalachian/Acadian Ecoregion, represent a diversity of perspectives about the environment. As we will discuss further, such a holistic methodology will be important for organizations like TNC and NCC if their efforts to broaden demographic reach in locations such as our group's focus area are to be successful.

> *"When I was a young boy my father would take me hunting with him and mushroom picking and that's how I was introduced to nature."*
>
> *-David Manelli*

2.4 Sense of Place

In order to understand how it is that individuals and groups relate to their environment, one must first understand the ways in which people cultivate a sense of place, what that cultivation means, and the identity formation that results. Sociologists agree that there is no consistent interdisciplinary understanding of "place" (Convery et al. 2012). "Place" and "sense of place" are concepts that are constantly developing. Further, as they develop, these concepts will continue to have effects on many different sectors of life including politics, community identity, economy, and social relations.

In order to understand place, it is important to understand that place refers to both location and locale (ibid.). In other words, place refers to not only fixed geographic coordinates on the earth, but also to built/natural material settings (ibid.). For the purpose of this study, we focus on place as it is perceived by those residing in the NAAE, and therefore will need to take into account both of these definitions.

In order to further understand place, both rural and urban settings must be considered. Convery et al. (2012) discuss a fundamental connection that they have observed between rural locations and "the land." Land-based activities (including resource extraction) are considered to be staple industries in rural areas. Land management policies of rural economies are, therefore, what most concretely differentiates them from urban economies, and are strong points of interest when studying both urban and rural communities. The relationship between rural economies and the land can be further discussed by regarding future land actions (such as restoration, enhancement, or preservation) and how they might affect landscapes. As previously discussed, the majority of the literature on this topic focuses on the restoration or preservation of existing lands rather than the creation of new conserved areas. The inherent changes of any landscape are often overlooked in search of true preservation, which might have further effects on individual perceptions of place.

Over the past decade, a shift toward more culturally and geographically nuanced work in relation to landscapes and place has occurred (Cosgrove 2004). Understanding place is now more commonly accepted as key to understanding how or why an event, or series of events, has occurred in that locale. Further, the relationships between people, places, and things are now understood to be important not only on the individual level, but also the community level; deep emotional and psychological ties have been found between individual and group self-definitions in relation to place (Cosgrove 2004). According to Teo and Huang (1996), place is actually an active setting inextricably linked to the lives and activities of its inhabitants. Because of this, places are not just abstractions or concepts, but are directly related to experiences or phenomena throughout the lived world. We therefore found it important to include questions in our survey regarding individual participation in outdoor activities and

time spent to get to these activities as a means to further understand how it is that people think about the region in which they live. As defined by Tuan (1975) "Experience is a cover-all term for the various modes through which a person knows his world" and in association with that, his or her home is a nurturing shelter that gets constructed through said experiences. This association with experience or phenomena of the lived world makes it clear that understanding how human beings relate to particular places is more qualitative and requires more than a simple surface understanding—an understanding we hoped to gain through our survey results and semi-structured interviews.

> *"I have always been concerned about the environment so a lot of my work connects with a sense of place and we've lived in a lot of different places."*
>
> *-Elizabeth Fram*

Cantrill and Senecah (2001) bring relation to place more specifically in line with environmental attitudes when they discuss the possibility of using sense of place as a foundation to examine the relationship between environmental awareness and self-schema. Further, they focus on the "human dimension" as a central component to environmental management and awareness, and through their research found that regulation and promotion of specific land uses are enhanced when they account for and include the local sense of association and "self-in-place."

2.5 Interest Group Formation

Society can influence the state in its decision-making processes through a number of ways: voting, through the media, acts of civil disobedience, and by lobbying through interest groups. Civil disobedience is arguably the most influential, as it brings together large groups of individuals under one common agenda. Interest groups have extraordinary power, both in leveraging money and votes for a cause and in "on the ground"-level organizing.

Our project specifically investigates the relationships between individuals and their environment for the benefit of our community partners, TNC and NCC. These organizations have a clear interest in our project, as they are constantly looking to diversify and expand their support base. Our community partners are interested in moving beyond their traditional membership in order to maintain relevance into the future decades. Only with such a diverse group of supporters will these organizations maintain the strength and power they have in lobbying elected officials and in spurring environmental change.

> *"In theory I think about the landscape in a broader scale, a more regional scale, and the connectedness of the forest. But on the personal level, it is really the places that I tend to access that I connect with and I think that those are within a couple hour radius of where I live."*
>
> *-Elise Annes*

Eric Bosso argues that although interest groups rise and fall all the time, many of the more significant environmental groups have been a constant in Washington since the 1970s, and thus have a long and storied relationship with policy-makers. The Nature Conservancy and other land trusts are good examples of such groups. They arose out of the preservationist movement in the 1950s and have

remained relatively influential in terms of setting policy at the national level. As another author writes: "Environmentalists, as persistent advocates for their cause, and the organizations they built deserve the credit" [for the adoption of many significant environmental laws in the 70s] (Bevington 2009: 8.)

While some groups, like Earth First! use tactics like direct action, The Nature Conservancy and others are considered "permanent fixtures in national politics" that use the laws of the 70s to negotiate with politicians and leverage their agendas (Bevington 2009:11). These early conservation organizations rose out of the growing concern in elite circles about the depletion of natural resources and precious landscapes, the "hot" environmental topic of the day (Salisbury 1969). While they have remained highly influential, the generation that supported them is aging, and such organizations are facing a turning point. As their supporters continue to get older, the charges of elitism and being out of touch with the people will continue to grow, and it is possible that the clout of these organizations may begin to decline in Washington (Lewis 1995). While this has not occurred yet, the aging of the baby boomers would suggest that such critiques are imminent. However, by diversifying their support base and modernizing their outreach strategies, these organizations could avoid becoming a niche group for older generations and capitalize on new opportunities in the modern age of environmentalism. By shifting their message and taking advantage of new technologies, laws, and fundraising techniques, groups like TNC and NCC can more effectively reach a broader base of membership and thus, maintain relevance at the federal level (Bosso 2005).

2.6 Analogous Cases

In order to contribute to the dialog surrounding people's connections to the natural environment, we researched the academic literature discussing similar case studies to our own. While many studies have been conducted that focus on the attitudes that specific groups of people have toward the environment, our project is more unique in its transboundary nature—one that considers cultural, linguistic, and national differences.

In her article "Transboundary Conservation in Southern Africa", Jones (2004) explores the Western-driven conservation movement occurring in Southern Africa that seeks to expand protected areas across international borders. The Lubombo Transfrontier Conservation Area (Peace Park) takes a Community-integrated Geographic Information Systems approach in order to understand local decisions in relation to the overarching global conservation initiatives. Through a combined qualitative and quantitative approach, Jones's research project aims to understand the underlying social motivations that influence the ways in which people use land. "Community land use decisions must go beyond structural explanations and include more agentist explanations emanating from deeply held cultural norms. *Perceptions* of land use rarely factor in such analyses, but often drive change at a greater pace than the realities of external drivers" (Jones 2004:2). Community-integrated GIS seeks to fuse the local knowledge of the area in question with scientific research in order to gain a holistic understanding of individuals' attitudes and perceptions (ibid.).

The above study found that many people in the region had a shared identity surrounding the land. With a utilitarian perspective, the local people felt as though nature is a positive part of their lives because it gives them the resources they need. Land conservation projects, however, give people less access to social, economic, and natural resources. Because of this, Jones states, "Any change in land use

must make provision for replacement or provide alternatives to these resources to minimize potential future conflict, thus ensuring community benefits and longevity of conservation areas" (2004:21).

Research of conservation initiatives has led to an understanding that individuals and cultures view the concept of nature differently. As a result, many organizations take a more culturally-integrated approach to conservation (Muller-Boker and Kollmair 2000). "The labels for these new approaches include 'people-oriented conservation,' 'co-management' or 'joint management, 'integrated management,' and 'participatory management'" (Muller-Boker and Kollmair 2000:325). The Kanchenjunga Conservation Area Project team, which works in Nepal, has explored the importance of educating local people about their ongoing conservation initiatives and the significance of implementing a community-integrated approach in order to institute more functional and sustainable conservation programs (Muller-Boker and Kollmair 2000).

Conservation projects must consider and integrate the needs of local individuals in order to create a sustainable conservation area that will also benefit the community. This concept directly relates to our project—conservation organizations such as TNC and NCC must be aware and respectful of local people's attitudes toward any environments they hope to conserve in order to establish longevity and sustainability of potential projects.

"Nature is huge. […] Just being out in it and seeing it, seeing the coyotes trot along or seeing them at night or hearing the owls hooting in the woods and knowing that I am doing my best to run my business and work my little corner of the world and not damage anything in the process."

-Kate Selby

3. METHODOLOGY

Over the course of the semester our team used a multi-method approach, including a combination of interviews, research of extant literature, and survey results in order to look at how people of varying backgrounds and demographics relate to their environments throughout Northern Vermont and Southern Québec. We hoped to gain a holistic understanding through balancing both quantitative and qualitative approaches. The entirety of the research was conducted from Middlebury College's campus in Middlebury, Vermont.

Research for this project began in February 2013 and ended in May 2013. Data collection was carried out primarily through two methods: a survey and semi-structured interviews. We opted to create and distribute a survey because we felt it would be the most efficient way to reach a large number of diverse people. The survey, which was conducted both online and through the United States Postal Service (USPS), was distributed throughout Vermont and Québec to people of varying demographic backgrounds. To supplement the quantitative information gathered in the survey, we decided to simultaneously conduct semi-structured interviews in order to gain a more in-depth understanding of individuals from different professions and with various relationships to the environment.

The unit of analysis throughout this research is a person that we have interviewed and/or those who have responded to our survey. Some of the demographic factors that we included in our survey included—as stated in our initial project objectives—whether they live in cities or in rural areas, age, ethnicity, and income.

The interviews came from a sample of nine individuals throughout the broader region between Northern Vermont and Southern Québec whom we found through various methods, most commonly suggestions from people in our personal networks. The interviewees were chosen because they are residents in our focus region (Figure 2), as well as by their willingness to participate in this study. These interviews were semi-structured in order to create a more comfortable, conversational atmosphere while still collecting information most relevant to our study. We did not compensate anyone for their participation in either the survey or the interviews that were conducted.

All survey responses were anonymous. At the start of all interviews we orally delivered a verbal consent agreement at which point we gave our subjects the opportunity to choose to remain anonymous through the use of a pseudonym.

3.1 The Survey: Gauging Place-based Identity, Perceptions, and Relationships

The survey (Appendix A) was created, revised, and distributed by our research team specifically for our project and underwent multiple iterations and drafts. The purpose of the survey was to provide useful information to directly answer how people of varying backgrounds and demographics relate to their environment throughout Northern Vermont and Southern Québec. When writing the survey, we aimed to use language with no emotional triggers or political charge. Our goal was to maintain a high level of neutrality so as to limit the presence of our team's biases in the survey.

The questions in the survey were broken into three distinct sections: "Demographic Factors," "Gauging Place-based Scale Identification," and "Attitudes toward the Environment vs. Conservation Actions." These three sections contained questions intended to address three of our project objectives,

including gaining an understanding of the demographics that make up the region, identifying at what scale individuals identify with the environment, and understanding what activities individuals engage in and how those may or may not lead to environmental action. The information collected regarding demographic factors aimed to gather as much personal information about our respondents and their backgrounds while simultaneously maintaining anonymity. The outdoor activities that we listed on the survey were intentionally chosen to represent a wide variety of outdoor enthusiasts and to include possible recreational activities across demographics.

Demographic Factors

The demographic factors of respondents were sought out in order to understand more about the geographic, cultural, occupational, and familial identity of those who completed the survey. The factors collected throughout this survey in no way provided enough personal information to identify the individuals, and therefore did not compromise the confidentiality of the survey. This demographic information was of great importance to the analysis of our survey results.

Gauging Place-Based Scale Identification

The place-based scale identification section of the survey served as the channel through which we were further able to gauge specific, individual place-based associations. Understanding certain elements of individual relationships to the environment, such as how much distance one is willing to traverse in order to engage with it, and what region one considers their own, is key to understanding people and what is or is not important to them.

Environmental Attitudes and Actions

This section of the survey is meant to gauge the consistency between people's attitudes toward the environment and their acted conservation—or conservation-minded—behavior. The questions in this section ask about specific environmental perspectives, with which respondents rate their agreement, as well as specific environmentally-oriented behaviors, for which respondents indicate the frequency of their participation.

When beginning the survey-writing process, we consulted Chapter 6, "Describing What People Do: Surveys, Observations, and Sampling" of Beth Morling's book, *Research Methods in Psychology: Evaluating a world of information*, in order to ensure the usage of effective and appropriate survey language and protocol. We also contacted and received advice from Michelle McCauley, Professor of Psychology and survey expert at Middlebury College, who aided our team through constant feedback over the course of the semester.

Distribution

The survey created for this project was distributed both electronically and through the USPS. We contacted various organizations, newspapers, and institutions, and used their contact lists, websites, social media networks, and e-newsletters in order to increase those reached by the survey. Additionally, members of our group and our community partners distributed the survey through their personal network of friends and co-workers. We used the Emergency 911 contacts from GIS data sets and www.canada411.ca in order to collect random addresses to send the survey to through the paper mail system.

Translation

In order to make our survey as accessible as possible to both English and French speaking residents of Vermont and Québec, we translated the original English version into French. When accessed online, respondents were given the option to select their language of choice. We worked closely with our bilingual community partner to ensure consistency between the two languages, both in the phrasing of the individual questions and the meaning that they conveyed. We had to correct for certain untranslatable categories such as those relating to the education system, which differ across jurisdictional and cultural boundaries.

Data Description

The subjects targeted by this study were residents of Northern Vermont and Southern Québec above the age of 18. Through our various distribution channels, we collected a sample of 252 (232 via internet and 20 via mail) responses to the survey. Due to time constraints, however, we only analyzed the results of 224 respondents who completed the survey electronically.

We compared the demographic breakdown of our survey statistics with those of the Canadian and American censuses to correct for any demographic biases in the responses. The population of this region is approximately 3,880,000 people. According to the American Community Survey (2007-2011), the population of Vermont consists of 50.7% women, 95.5% Caucasians, and households with an estimated median income of $53,422 (US Census). The Canadian census shows the population of the Québec province to consist of 50.9% women (2011), 89.7% whites (2006) and households with an estimated median income of $65,900 (2011) (Canada Census).

The gender and education characteristics of Vermont and Québec residents in our sample notably differ from the US and Canadian census data. The percentage of female respondents from our survey (63.4%) is much higher than the percentage of the female population in the region (51%). In order to make our sample more representative of the population, we applied a sampling weight that corrects for the oversampling of females in our study. The sampling weight is calculated as the following:

Gender	Population Proportion	Sample Proportion	Population/ Sample	Weight
Female	0.51	0.634	0.51/0.634	0.80
Male	0.49	0.366	0.49/0.366	1.34
Total	1	1		

Although other demographic and socioeconomic characteristics—notably education level but also age, marital status, and household income—differed from the census data, we chose to correct only for gender as it was the variable that by far clearly demonstrated a distribution or response bias.

Another important note to consider in regards to how we analyzed the data is that most of the environmental attitude and behavior questions from the survey are on a scale of one to seven in either ascending or descending order, depending on the survey question. For example, one question asked the individual to gauge his or her level of connection to a place, ranging from one (no connection) to seven (very strong connection). We treated such variables as continuous rather than as distinct categories to ease the analysis. In addition, in order to simplify some of our analyses, we collapsed several questions into a few lump categories. For example, in one question we ask respondents to identify how often they

participate in any of twenty-eight activities we identified as "outdoor activities." In order to simplify the analysis, we lumped the activities into three broad categories that get at the questions we were interested in asking of the data: outdoor sports, outdoor casual activities, and outdoor resource collection activities (See Table 2). Occupations were also grouped into seven general categories: outdoor occupations, indoor occupations in the public arena, indoor occupations in the private realm, students, artists, unemployed, and retired. We also combined all of the variables gauging the respondents' feelings towards conservation initiatives into one—"Overall Environmental Attitudes"—to create essentially an "environmental scorecard" for our survey respondents. Lastly, we combined all environmentally-friendly actions into a similar variable titled "Overall Environmental Actions" to assess the effect of the respondents' attitudes towards conservation initiatives on their general inclination to engage in pro-environmental actions.

To analyze the data, we performed a series of regressions in Stata. We examined the relationship between key demographic variables (such as place of residence, gender, age, race, and more) and variables gauging the environmental attitudes and behaviors of the respondents (such as their connection to scales of location, their feelings towards conservation initiatives, and their environmentally friendly behaviors). By comparing questions asked in the survey against both demographic characteristics of the survey population and other questions asked in the survey, we were able to ask such questions as: "Does age have an impact on the amount survey respondents donate to conservation organizations?" or "Do people who play outdoor sports have more positive environmental beliefs than those who do not?" For a complete list of our summary statistics for each of the questions asked in the survey, see Appendix E.

3.2 Interviews

We conducted eight semi-structured interviews, including one interview with two interviewees at a time, in order to gain deeper, richer personal narratives of individuals' relationships to their surrounding natural environments. The interviews were conducted both in person and over the phone and included seven Vermont residents, one Québec resident, and one individual with residences in both Vermont and Québec. The questions we asked our interviewees aimed to supplement the information gathered through survey responses; interviews allow for more comprehensive and open-ended conversation and discussion (See Appendix B for complete list of interview questions). These interviews, therefore, allowed for more in-depth understanding of individual perceptions and experiences throughout the region. All interviews were recorded with permission from the individuals. The interviews supplemented the quantitative data we gathered through the survey with a qualitative approach, allowing individuals to elaborate and give more specificity regarding their personal relationships with nature. Our aim was to represent individuals from diverse backgrounds, perspectives, and relationships to the outdoors so as to understand interests of a diverse group of people that spans linguistic, cultural, and national borders. The interview results, were used both to develop further recommendations as well as to put together a short film sharing the individuals' personal thoughts about—and relationships with—their environment.

4. RESULTS, ANALYSIS, & RECOMMENDATIONS

From the combination of our survey and semi-structured interviews, we collected a notable amount of data. We selected seven questions from our survey that we thought were the most representative of our initial objectives and ran a series of regressions against our demographic data to find significance. These include: how strongly people feel connected to places, how many days per year they participate in outdoor activities, how far respondents are willing to travel to do outdoor activities, whether respondents are willing to cross borders to participate in outdoor activities, beliefs about conservation initiatives, general environmental attitudes, and environmental behaviors. The results presented in this section represent the 224 electronic survey responses that we received before May 1, 2013 (see Figure 3 for the geographic distribution of responses).

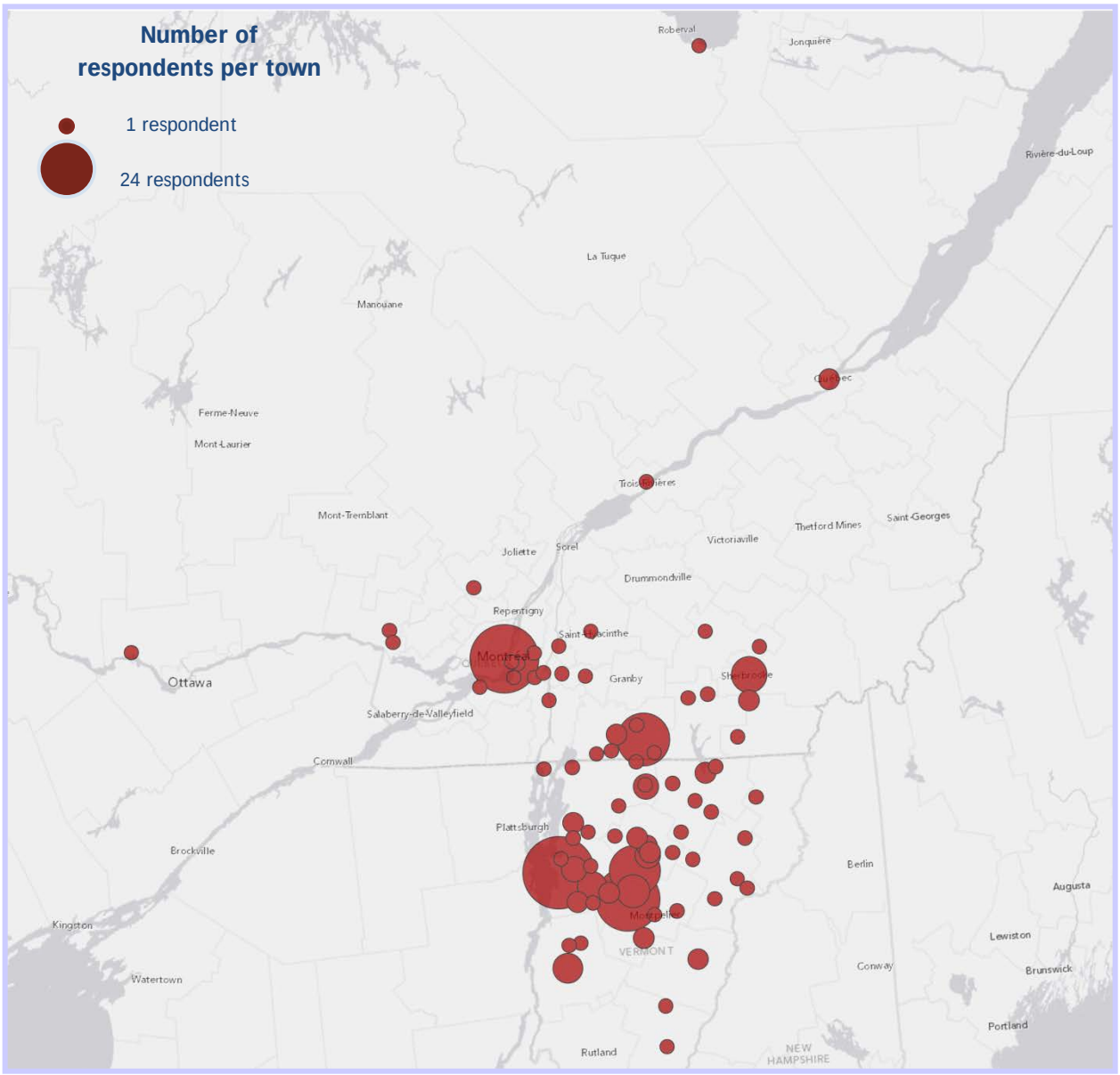


Figure 3. Number of survey respondents per town.

The tables and information described in the following analysis consider only the significant relationships we found. For tabular results of all of the regressions we ran—including those that were not significant—see Appendix C. This section heavily references our survey, which can be found in Appendix A.

Below you will see an example of one of the many tables that appear in this section. The questions on the left (i.e. How far are you willing to travel to do any of your primary activities?) refer to the survey question the regression is testing. The columns then refer to the categories we ran the regressions on—including demographics and a number of other questions from the survey. This table, for example, answers the question, "Does how willing you are to travel to do your primary activities have any relationship with what type of activities they are?" Inside the boxes you will find the significant associations found in the regression analysis. A plus sign (+) indicates a positive association, while a negative sign (-) indicates a negative association. The p value indicates the significance of the association.

Example Table: Willingness to travel vs. demographic categories and activities

(See Table 13 in Appendix C for more detail on results)

Traveling Distance	**Demographics ***	**Demographics and Sport Based Activities**	**Demographics and Casual Activities**	**Demographics and Resource Collection Activities**
How far are you willing to travel to do any of your primary activities?	No significant associations	(+) Sport Activities, p = 0.039	No significant associations	(+) Collection Based Activities, p = 0.060

*For this question, we ran travel distance against the following demographic categories: Children, Married, Québec, Female, Average Annual Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.

4.1 Result I—Connection to Locations

Our second project objective aimed to understand people's connection with different scales of place, whether it be at a town level or at a broader regional level. We asked our respondents to rank their level of connection to a variety of different places of various sizes on a scale from 1 (no connection) to 7 (very strong connection). Among all survey respondents, the place with which survey respondents connected the most was their town/city by a factor of 5.57 on a scale of 1 to 7, followed by Vermont at 5.0 and the Green Mountains at 4.86.

In order to address this objective of understanding scale, we regressed people's connection to places and scales on a number of demographic variables to better understand how different groups of people feel about their surroundings (Table 1). This specific regression analysis indicated that age is positively associated with people's sense of connection to places at most scales—in other words as age increases so does connection to place. Further, people with children are more likely to feel connected to their town/city, but are less likely to feel connected to the natural environment—or places like the Green Mountains or forested areas—compared to people without children. Married people are more likely to feel connected to the Green Mountains than people who are not married. They also feel more connection to the state of Vermont. Quebecers, as expected, are found to be more likely to feel connected to the province of Québec, Eastern Canada, and Canada and are less likely to feel connected to the state of

Vermont, New England and USA, compared to Vermonters. A more meaningful finding is that compared to Vermonters, Quebecers are more likely to feel connected to the NAAE, the St. Lawrence Valley ecoregion, and the Southern Mountains, but less likely to feel connected to the Lake Champlain ecoregion and the Green Mountains. The female respondents in our survey appear to be less connected to the NAAE and the Lake Champlain ecoregion than the male respondents, though they feel more connected to Eastern Canada and North America. Higher income is associated with less connection to Vermont and more connection to the USA. Educational level seems to have no impact on people's sense of connection to places. Place of residence, however, does play a role. Compared to people living in the suburbs, rural people are more connected to the Green Mountains, the Southern Mountains and North America whereas the urban people are more connected to their town/city, their province/state, the Lake Champlain ecoregion, New England and North America.

Table 1: How strongly do you feel connected to the following places?

(See Tables 10a and10b in Appendix C for more detail on results)

Location	Demographics *	Location	Demographics *
Town	(+) Age, p = 0.091 (+) Urban, p = 0.001 (+) w/Children, p = 0.087	**The Green Mountains**	(+) Rural, p = 0.008 (+) Married, p = 0.073 (+) Age, p = 0.060 (-) w/ Children, p = 0.070 (-) Québec, p = 0.000
Vermont	(+) Age, p = 0.000 (+) Urban, p = 0.017 (+) Married, p = 0.028 (-) Québec, p = 0.000 (-) Income, p = 0.002	**New England**	(+) Québec, p = 0.000 (+) Age, p = 0.002 (+) Urban, p = 0.078
Québec	(+) Québec, p = 0.000 (+) Urban, p = 0.001 (-) Female, p = 0.982	**Eastern Canada**	(+) Québec, p = 0.000 (+) Female, p = 0.060 (-) w/ Children, p = 0.076
Northern Appalachian/Acadian Ecoregion	(+) Québec, p = 0.004 (-) Female, p = 0.039	**The United States of America**	(+) Age, p = 0.002 (+) Income, p = 0.038 (-) Québec, n = 0.000
St. Lawrence Ecoregion	(+) Québec, p = 0.000 (+) Age, p = 0.047	**Canada**	(+) Québec, p = 0.000
Lake Champlain Ecoregion	(+) Age, p = 0.000 (+) Urban, p = 0.038 (-) Québec, p = 0.000 (-) Female, p = 0.002	**North America**	(+) Age, p = 0.016 (+) Rural, p = 0.002 (+) Urban, p = 0.014 (+) Female, p = 0.022 (-) Outdoor Occupations, p = 0.057
The Southern Mountains	(+) Québec, p = 0.065 (+) Rural, p = 0.938 (-) w/ Children, p = 0.070		

*For each place, we ran the locations against the following categories: Children, Married, Québec, Female, Average Annual Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.

Interpretation and Recommendation I

From our survey results, the predictions from our regressions, and our interpretations of this data set, we posit the following recommendations to our community partners. We suggest that the positive association between an individual's age and the strength of the connection he or she feels to places is due to the fact that older respondents have spent more time in one location than the younger ones. Their strong attachment to places demonstrates how much they value the communities and networks they have built over time. Therefore, if our community partners are interested in gaining support from younger individuals for conservation initiatives, ***we recommend that the conservation organizations place lesser emphasis on themes of place-based identification, and perhaps greater emphasis on outdoor activities, or ways in which younger generations can recreationally utilize the conservation locations and gain an increased association with said places, continuing off of the understanding that place can refer to both a location and a locale*** (Convery et al. 2012).

Through our results, we further found that people living in rural environments more commonly identify with ecological boundaries than those living in suburban ones, and that those respondents living in urban environments more commonly associate with political boundaries. ***We therefore suggest that our community partners focus on ecological regions when promoting their conservation initiatives in rural environments, and focus on political regions when promoting these same conservation initiatives in urban environments, while continuing to consider the importance of both natural and built environments on individual associations with place*** (Convery et al. 2012).

4.2 Result II—Activities

One of our major goals was to identify the activities people do outdoors and how they interact with their environment, a task encapsulated in our first objective. We gave respondents a list of 28 activities and asked them to indicate how many days per year they participated in them, from 0 days to 100+ days (Table 2).

Table 2. List of activities in survey

Sport-Based Activities	Casual/Contemplative Activities	Resource Collection/Professional-Based Activities
Rock Climbing	Personal Reflection	Hunting
Snowmobiling	Hiking	Fishing
Playing Team Sports	Running/Walking	Gathering/Firewood
Skiing/Snowshoeing	Camping	Logging
Ice Skating/Playing Hockey	Walking Pet(s)	Maple Sugaring
Horseback Riding	Playing in Fields	Farming/Gardening
Canoeing/Kayaking	Bird Watching	Bee Keeping
Water Sports	Swimming/Playing	Field Research
ATV Riding & Biking	Painting/Drawing	

From the data, we calculated the mean number of days per year people participate in the 28 activities and identified the top 10 most popular activities from the mean. The top 10 activities by number of people who participated in them are running/walking; hiking; swimming or playing in creeks, lakes, or oceans; personal reflection; farming/gardening; playing in fields and parks; canoeing/kayaking;

camping; biking; and skiing/snowshoeing. To provide a sense of scale, respondents indicated that they participated in most of these activities around 25 days per year.

There were some interesting findings when we broke the respondents into specific demographic categories as well. We find that compared to Vermonters, Quebecers spend less time on farming and gardening. Other findings include: people with children spend more time playing in fields/parks and swimming/playing in creeks, lakes, or oceans; women and married people spend more time farming/gardening; and people with outdoor occupations spend more time skiing/snowshoeing and farming/gardening. Additionally, compared to people living in the suburbs, rural residents are found to spend more time hiking, farming/gardening, and engaging in personal reflection outside, and urban residents are found to spend more time biking.

When looking at the activities categorically, we found that outdoor sports are only associated, negatively, with age, though the association is of small significance (Appendix C). A one unit increase in age (approx. 10 years) predicts only a couple day decrease in time spent playing outdoor sports. Resource collection activities are positively associated with living in a rural area and taking up an outdoor occupation. Further, not only Quebecers, but also women and rural residents (compared to suburban residents) spend more time on casual activities. Age and income are, not surprisingly, negatively associated with casual activities outdoors; however, the associations are also of small significance (Appendix C, Tables 3-4).

Interpretation and Recommendation II

We understand our finding that predicts respondents from rural environments spend more time engaging in casual outdoor activities to be consequential of their greater access to the natural environment. In this same vein, we suggest that Quebecers have a negative correlation with casual outdoor activities because southern Québec is considered to be a more developed region than northern Vermont, which is viewed as a remote region. ***Therefore, we recommend that TNC and NCC focus on access to sport-based activities in Québec and resource collection or casual activities in Vermont. We recommend that TNC and NCC take an all-inclusive approach to the range of possibilities in outdoor sports when talking with individuals about conservation initiatives in their focus ecoregions. More specifically, we suggest that TNC and NCC work together with outdoor sporting related organizations, such as The Vermont Association of Snow Travelers or Québec Original, to create a dialog. This would enable people currently outside of the TNC and NCC membership base to gain a greater understanding of their initiatives, and give TNC and NCC a greater understanding for how to pitch their initiatives to a more diverse population.***

Table 3. Number of days/year you participate in categories of activity against major demographic categories

Activities	Demographic
Sports	(-) Age, p = 0.000
Casual	(+) Female, p = 0.038 (+) Rural, p = 0.000 (-) Québec, p = 0.005 (-) Income, p = 0.001 (-) Age, p = 0.024
Collect	(+) Rural, p = 0.000 (+) Outdoor Occupation, p = 0.001

Table 4. Number of days/year you participate in a specific activity against major demographic categories

(See Tables 12a and 12b in the Appendix C for more detail on results)

Activities	Demographics*
Personal Reflection	(+) Rural, p = 0.010 (-) Québec, p = 0.001 (-) Income, p = 0.000
Hiking	(+) Rural, p = 0.009
Running/walking outside	(-) Québec, p = 0.002
Camping	(-) Age, p = 0.000
Walking a Pet	(-) Québec, p = 0.005
Playing in a Field	(+) w/ Children, p = 0.014 (-) Québec, p = 0.008 (-) Age, p = 0.000
Swimming/playing in creeks, lakes, oceans, etc	(+) w/ Children, p = 0.051 (+) Female, p = 0.058 (-) Income, p = 0.020 (-) Age, p = 0.011
Skiing/Snowshoeing	(+) Outdoor Occupations, p = 0.022
Biking	(-) Age, p = 0.011 (+) Urban, p = 0.043
Canoeing, kayaking, rafting, or sailing	(-) Age, p = 0.022
Farming/ Gardening	(+) Married, p = 0.049 (+) Female, p = 0.000 (+) Rural, p = 0.022 (+) Outdoor Occupation, p = 0.007 (-) Québec, p = 0.018 (-) Income, p = 0.034

*We ran each activity against the following demographic categories: Children, Married, Québec, Female, Average Annual Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.

4.3 Result III—Willingness to Travel

Varying degrees of participation in the 28 activities is useful information; however, the distance people would be willing to travel to participate in any one of them is also interesting. We asked respondents to consider the outdoor activities they most commonly participate in and to indicate how far they would be willing to travel to do any one of them (less than 30 minutes to more than 10 hours). This question addressed our objective seeking to determine and understand the scale at which people identify with their environment. Particularly, we were interested if individuals willing to travel farther distances identified with nature at a larger, national or ecoregional, scale.

Respondents were, on average, willing to travel around 2 hours to participate in any given outdoor activity. However, when we ran regressions on a series of demographic variables for this question we found no significant associations (Table 5). The R-squared value is very small, suggesting that the independent variables (age, income, and education level) do not explain the variations in the dependent variable ("Travel") (See Appendix C). After adding the activities variables into the model, we found that that people who participate in resource collection activities are slightly more willing to travel longer distances than those who do not.

Table 5. Willingness to travel vs. demographic categories and activities

(See Table 13 in Appendix C for more detail on results)

Traveling Distance	Demographics *	Demographics and Sport-Based Activities	Demographics and Casual/Contemplative Activities	Demographics and Resource Collection/Professional-Based Activities
How far are you willing to travel to do any of your primary activities?	No significant associations	(+) Sport Activities, p = 0.039	No significant associations	(+) Collection Based Activities, p = 0.060

*For this question, we ran the travel against the following demographic categories: Children, Married, Quebéc, Female, Average Annual Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.

Interpretation and Recommendation III

Before analyzing the results, we hypothesized respondents with greater average annual household incomes, as well as respondents who engage in more outdoor activities, would be willing to travel greater distances in order to engage in outdoor activities than others. After running a series of regressions, however, we found that our results do not support this hypothesis. Our survey results suggest that in fact average annual income does not have a significant association with the distance respondents are willing to travel. ***Therefore, because we have found that travel does not factor into association with place, per Result Section I we recommend that our community partners focus their outreach at levels of place identification based on permanent residence***.

4.4 Result IV—Crossing Borders

We then asked questions to determine the scale of a person's connection to the environment through understanding respondent's willingness to cross borders, specifically the Vermont-Québec border, to participate in any of the listed activities. On average, our data suggested that 86% of people are willing to cross borders to participate in outdoor activities.

After running regressions for people's willingness to cross borders to participate in their most common outdoor activities on the various demographic variables, we found that married people were more likely than non-married people to be willing to cross borders to participate in outdoor activities (Table 6). We further found that the more a respondent earned and the more education he/she received, the less willing he/she was to cross borders to engage in outdoor activities. Moreover, when the "Travel" variable was added into the model, we found that the further one was willing to travel to participate in outdoor activities, the more likely that he/she was also willing to cross borders. It should, however, be noted that the explanatory power of all of the independent variables was quite limited (R-squared values are quite small), since the value of respondents answering "yes" was so high. (Appendices C and E).

Table 6. Willingness to cross the border vs. demographic categories and willingness to travel

(See Table 14 in Appendix C for more detail on results)

Border Crossing	Demographics *	Demographics + Travel	Travel
Are you willing to cross the border to participate in activities?	(+) Married, p = 0.007 (-) Québec, p = 0.002 (-) Female, p = 0.042 (-) Income, p = 0.026	(+) Travel, p = 0.015	(+) Travel, p = 0.011

*For this question, we ran willingness to cross the border against the following demographic categories: Children, Married, Québec, Female, Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.

Interpretation and Recommendation IV

From this information we found that if respondents have a vested interest in participating in outdoor activities of any kind a significant distance (more than 2 hours) away from their home, they may be more willing to cross borders, and thus think of the region in a broader, less political sense. Similarly, since most respondents responded "yes" to this question, it is probable that these thoughts about a broader, less political region, are already occurring and that ***our community partners have the ability to take advantage of this transboundary mentality in their promotion of conservation initiatives***.

4.5 Result V—Views on Conservation Initiatives

We also asked a number of questions about respondents' beliefs regarding conservation initiatives. We provided a series of statements with which people either agreed or disagreed on a scale of one ("strongly disagree") to seven ("strongly agree"). They included: "Conservation initiatives protect my source of income/livelihood," "Conservation initiatives protect the natural environment and biodiversity," "Conservation initiatives protect the environment for society's use/recreation," and "Conservation initiatives should not be a priority." The responses to these statements were meant to gauge people's environmental attitudes, particularly towards conservation initiatives like those completed by our community partners.

Table 7 presents the results of a number of regressions we ran for the four questions we asked concerning conservation initiatives based on demographics, activities, the "Donate" variable, and different occupation categories. Looking only at the demographics, we found that respondents who have

children or have outdoor occupations agree more with the statement that conservation initiatives protect their source of income, but that age is somehow negatively associated with the level of agreement to this statement. People living in Québec are also more likely to agree that conservation initiatives are supposed to protect the natural environment and biodiversity. Further, Quebecers and people who are married are more likely to believe that conservation initiatives should protect the environment for society's use or recreation, but people with higher income tend to disagree. Lastly, on the question of whether or not conservation initiatives should be a priority at all, people who are married and people who have higher education are more likely to say yes based on our results.

Table 7. Feelings about conservation initiatives vs. demographic categories, activities, donation, and occupations

(See Tables 15a-d in Appendix C for more detail on results)

Conservation initiatives...	Demographics *	Demographics + Activities**	Demographics + Donation***	Demographics + Occupations
...should not be a priority	(-) Married, p = 0.045 (-) Education, p = 0.083	(-) Sports, p = 0.103	Not significant	(-) Indoor private, p = 0.051
...protect the environment for society's use/recreation	(+) Married, p = 0.034 (+) Québec, p = 0.043 (-) Income, p = 0.028	(+) Sports, p = 0.094	(+) Donate, p = 0.001	(+) Indoor private, p = 0.060
...protect the natural environment and biodiversity	(+) Québec, p = 0.041	(+) Sports, p = 0.096	(+) Donate, p= 0.001	Not Significant
...protect my source of income/livelihood	(+) w/ Children, p = 0.060 (+) Outdoor Occupations, p = 0.006 (-) Age, p = 0.011	(+) Sports, p = 0.000 (+) Resource Collection, p = 0.063	(+) Donate, p= 0.000	(-) Indoor private, p = 0.039 (-) Indoor public, p = 0.005 (-) Student, p = 0.018

*For this question, we ran feelings about conservation initiatives against the following demographic categories: Children, Married, Québec, Female, Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.
** Activities include the three activity breakdown groups: Sports, Casual, and Resource Collection activities as listed in Table 2.
***We also ran this question against respondents' willingness to donate to conservation organizations, a question addressed in the next section.

Adding the three groups of activities (sports, casual, and resource collection) into the model, we found that people who spend more time on outdoor sports are more likely to support conservation initiatives in general, regardless of the purpose of such initiatives. Time spent on casual activities is not significantly associated with any of the four views, but time spent on resource collection has some association with the view that conservation initiatives should protect one's source of income/livelihood. This may be due to the fact that people who engage in resource collection activities are often employed to do so.

Looking at the "Donate" variable, which informs us of the respondents' willingness to donate to environmental NGOs, we observed that its relationship with all of the views on conservation initiatives—except for the one that found conservation initiatives not to be a priority—is positive and highly significant. In other words, the more likely one is to donate to environmental NGOs, the more likely he or she is to support conservation initiatives, no matter what purpose the initiatives serve.

Looking at the coefficients, it appears that one's willingness to donate has the greatest explanatory power on his/her belief that conservation initiatives should protect income and livelihood (Appendix C).

Lastly, we compared the views on conservation initiatives of different occupations with those of outdoor occupations. Compared to people in outdoor occupations, people employed in indoor occupations (see Table 8 for the specific occupations in this category) are surprisingly more likely to disagree with the statement that conservation initiatives should not be a priority. They are also more likely than people in outdoor occupations to support conservation initiatives for utilitarian/recreational purposes. People in indoor occupations (both public and private) and students are less likely to think of conservation initiatives as a means to protect their income/livelihoods, compared to people in outdoor occupations.

Table 8. List of Occupations in Survey

Indoor Private	Indoor Public	Outdoor Occupations
Management, Business, and Finance	Education	Agriculture
Sales	Government and Policy	Natural Resources and Construction
Service and Hospitality	Science, Engineering, and Technology	Production and Transportation
Installation, Maintenance, and Repair Craft	Healthcare	Manual Laborer

Interpretation and Recommendation V

When it comes to data regarding people's attitudes toward conservation initiatives, something the data predict is that the more educated people are, the more likely they are to think that conservation initiatives should be a priority. One possible explanation for this result is that education raises awareness of environmental conditions and issues. As a result of such awareness, this population of people is more likely to support the efforts of organizations that work to counter, or at least slow, various forms of environmental degradation.

Another noteworthy prediction from our data is that there is a positive association between living in Québec and thinking that conservation initiatives should protect the environment for society's use/recreation. As discussed in the section of the literature review entitled "Approaching Natural Stewardship from Multiple Angles," Quebecers tend to have a utilitarian perspective when it comes to nature and the outdoors. As such, it makes sense that they would perceive conservation initiatives as means of protecting the environment for society's use/recreation (although it is also worth noting that Quebecers also perceive conservation initiatives as means of protecting the natural environment and biodiversity).

Something else predicted by our data is that students do not think conservation initiatives should protect their source of income/livelihood. One explanation for this result could be that many students do not yet have full-time jobs, and if a person does not have a job then conservation initiatives cannot protect his/her source of income. Alternatively, there might be other reasons for their support or lack of support for conservation initiatives that are not identifiable based on the questions in our survey.

One recommendation we make to our community partners given the above results is to adopt a more egoistic or human-centric approach in pursuing future conservation initiatives (Merchant 1992). ***In other words, instead of attempting to appeal to people through a biospheric (caring for nature for its sheer existence) or altruistic (caring for nature for its social ramifications) lens, TNC***

and NCC should focus their marketing on getting people to care for nature for the benefits it will confer on them as individuals and families (Merchant 1992). The reason for this suggestion is that, as indicated above and in Table 7, people tend to support conservation initiatives as they protect the environment for society's use/recreation and people's source of income/livelihood.

4.6 Result VI--Environmental Beliefs

We also asked questions that meant to identify a person's general attitude about the environment, seeking to address our first objective in understanding a person's relationship to the environment. The questions again included a series of statements with which respondents agreed or disagreed on a scale of one to seven. We found that generally, our respondents have strong positive attitudes toward the environment. For example, there was an average response of 6.24 out of 7 in agreement with the statement: "I'm sympathetic with the efforts of conservation organizations."

Table 9. Environmental attitudes vs. demographic categories and activities

(See Tables 16a, 16b, 17a, 17b, 18a, and 18b in Appendix C for more detail on results)

Environmental Attitudes	Demographics*	Demographics + Activities** + Donate
Human innovation will ensure that we do not make the earth unlivable	Not significant	(-) Casual, p = 0.041
Humans are severely abusing the environment	(+) Married, p = 0.080 (+) Urban, p = 0.050 (-) Income, p = 0.022	(+) Resource Collection, p = 0.099 (+) Donate, p = 0.009
Plants and animals have as much right as humans to exist	(+) Married, p = 0.091 (+) Outdoor Occupation, p = 0.038 (-) Income, p = 0.000	(+) Donate, p = 0.006
Environmental crises have been greatly exaggerated by the media and politicians	(+) Income, p = 0.004 (-) Married, p = 0.045	(+) Casual, p = 0.040
I'm sympathetic with the efforts of conservation organizations	(+) Married, p = 0.023 (+) Québec, p = 0.057 (+) Educational Level, p = 0.032 (+) Outdoor Occupations, p = 0.023 (-) Income, p = 0.010	(+) Sports, p = 0.073 (+) Resource Collection, p = 0.063 (+) Donate, p = 0.000 (-) Casual, p = 0.061
The natural environment has a never-ending supply of resources and should be used as necessary	(+) Québec, p = 0.003 (+) Income, p = 0.047 (-) Married, p = 0.048	(-) Resource Collection, p = 0.092
I think endangerment of certain species is an important issue	(+) w/ Children, p = 0.015 (+) Québec, p = 0.031 (+) Urban, p = 0.088	(+) Sports, p = 0.041 (+) Donate, p = 0.037
I would only support a conservation initiative if I would personally benefit from it	(+) Income, p = 0.020 (-) Age, p = 0.000 (-) Outdoor Occupation, p = 0.032	(+) Donate, p = 0.000 (-) Sports, p = 0.071
Having access to undeveloped/natural areas is important to me	(+) Income, p = 0.016	(+) Resource Collection, p = 0.011
Overall Environmental Attitudes	(+) Married, p = 0.019 (+) Educational Level; p = 0.055 (-) Income, p = 0.001	(+) Donate, p = 0.001 (+) Resource Collection, p = 0.068

*We ran willingness to agree with these statements against the following demographic categories: Children, Married, Québec, Female, Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.

**Similar to Table 7, we also ran these statements against activity groups: sports, casual, and resource collection, as well as a participant's willingness to donate to conservation organizations.

Looking at the results in Table 9, something that emerges is the significant association between marriage and positive environmental attitudes. Out of the nine questions, married people are more likely to produce pro-environment answers on five of them. Another intriguing finding is that the wealthier one is, the more negative one's sentiment towards the environment is (seven out of the nine are significant). Although the outdoor occupations variable is not significantly associated with the overall environmental attitudes variable, people in outdoor occupations are more likely to agree with statements such as, "Plants and animals have as much right as humans to exist" and "I'm sympathetic with the efforts of conservation organizations" and disagree with statements such as "I would only support a conservation initiative if I would personally benefit from it." This observation suggests that people in outdoor occupations regard the environment as intrinsically valuable. Such a view is not picked up by the previous question on conservation initiatives perhaps because the previous question is phrased in such a way that most respondents would agree with the statement that the goal of conservation initiatives is to protect the natural environment and biodiversity. Lastly, looking at the overall environmental attitudes, we found that education is also positively associated with pro-environment attitudes. The more education one receives, the more likely he or she will be sympathetic to environmental causes.

Adding the activities and the "Donate" variables subsequently, we found that spending more time on outdoor activities in general and donating more often to environmental NGOs both seem to contribute to positive environmental attitudes. However, in regard to the activities, when the "Overall environmental attitudes" variable is regressed on the three activities at the same time, we found resource collection to hold the most (and the only significant) explanatory power.

Interpretation and Recommendation VI

We suggest that individuals who work outdoors have greater exposure to the natural world, and therefore, are more likely to place plants and animals on an equal level of importance as human beings. ***Therefore, we recommend that our community partners emphasize the significance of flora and fauna when framing conservation initiatives to those groups of professionals***.

We found it particularly interesting that the more money one has, the less likely he or she is to think that humans are severely abusing the environment, because our original hypothesis was the contrary. We believe that this could mean people with higher income have the potential to be less likely to fund conservation initiatives since they are less likely to believe the environment is being abused. On the other hand, people with lower annual household incomes do think that humans are abusing the environment. Since much of TNC and NCC's demographic base is comprised of people with higher annual household incomes, ***we suggest that our community partners either target this demographic of lower average annual income, or somehow ensure that high income individuals understand the effects that humans have on the natural environment through increased educational efforts***.

The fact that respondents with higher annual household incomes believe less strongly that plants and animals deserve equal treatment to human beings could be explained by the fact that people with lower incomes are more likely to engage in specific outdoor activities such as farming and gardening, activities which give you time and opportunity to connect to plants and animals.

From our results we have found that respondents who say they are sympathetic with efforts of conservation organizations include those who are married, Quebecers, those with lower average annual

incomes, individuals with increased education, and those with outdoor occupations. This information could be of great importance to our community partners as they work to increase and diversify their membership base. ***We recommend that our community partners create initiatives that specifically target these groups of individuals***.

4.7 Result VII—Environmental Behaviors

Finally, we asked a series of questions about environmental behaviors. We asked respondents to indicate how often they participated in a list of environmental activities. This included recycling, walking, biking, carpooling, using public transportation, donating to environment-based NGOs, purchasing organic/local food, considering energy-efficient models for appliances or vehicles, voting for candidates based on their environmental record, and considering environmental concerns to be an important political issue. These environmental behaviors address our first objective, which deals with understanding our participants' relationships to the environment, as well as our fourth objective, related to making recommendations to our community partners. Once again, we found that our respondents generally have a very strong positive association with many of these statements. The statement, "I consider environmental concerns to be an important political issue," for example, had an average response of 6.25 out of 7.

We found that, overall, when comparing these results with those of the previous question, people with positive attitudes towards the environment tend to also have environmentally friendly behaviors. This is true for all of the behaviors we suggested except for walking, biking, carpooling, and using public transportation. More specifically, we found that people living in rural areas are less likely to recycle than people living in suburban area. However, the relationship was only marginally significant and the small R-squared and the large mean (6.8 on a scale of 1 to 7) told us that people generally recycle regardless of their demographic characteristics (Appendix C).

We also found that people living in urban areas and people with higher incomes are more likely to walk, bike, carpool and/or use the public transportation system. People in outdoor occupations are more likely to walk, bike or carpool, but do not consciously try to drive less by using public transportation. Quebecers and women, on the other hand, are more likely to use the public transportation system but are not necessarily more likely to walk, bike or carpool whenever they have a chance. The significant relationship between living in Québec and using public transportation may be explained by Southern Québec being more urban than Northern Vermont and thus having a more developed public transportation system.

Interestingly, marriage has a negative association with using public transportation but a positive association with purchasing organic/local food and products. In contrast, annual household income has a positive association with the transportation variables, but a negative association with organic/local food and products purchase. Women are more likely to purchase organic/local food and products, and are also more likely to behave in an environmentally friendly way in general as compared to men.

Age is positively associated with one's decision to purchase energy-efficient appliances and vehicles. Age, education, and outdoor occupations also highly influence one's likelihood to donate to environmental NGOs. Education is also positively associated with the political variables, which is

reasonable, as education ought to be positively correlated with political awareness. Additionally, from both Table 9 and Table 10, we can see that income is negatively associated with pro-environment attitudes and support for environmentally friendly policies. Overall, when all eight environmentally friendly behaviors are weighed equally, our data suggests that Quebecers, women, urban residents (compared to suburban), and people in outdoor occupations are more likely to actively support environmental causes.

Table 10. Environmental behaviors vs. demographic categories and overall environmental attitudes

(See Tables 19a, 19b, 20a, and 20b in Appendix C for more detail on results)

Environmental Behaviors	Demographics*	Demographics + Overall Environmental Attitudes
I recycle	(-) Rural, p = 0.093	(+) Environmental Attitudes, p = 0.012
I walk, bike and carpool	(+) Income, p = 0.037 (+) Urban, p = 0.011 (+) Outdoor Occupation, p = 0.002	
I try to drive less by using public transportation	(+) Québec, p = 0.000 (+) Female, p = 0.009 (+) Income, p = 0.021 (+) Urban, p = 0.073 (-) Married, p = 0.088	
I donate money to environmentally-related NGOs	(+) Educational Level, p = 0.077 (+) Age, p = 0.003 (+) Outdoor Occupation, p = 0.000	(+) Environmental Attitudes, p = 0.000
I try to purchase organic/local food and products	(+) Married, p = 0.048 (+) Female, p = 0.005 (-) Income, p = 0.034	(+) Environmental Attitudes, p = 0.001
I consider energy-efficient models when purchasing new appliances and/or vehicles	(+) Age, p = 0.021	(+) Environmental Attitudes, p = 0.000
I vote for political candidates based on their environment record	(+) Educational Level, p = 0.059	(+) Environmental Attitudes, p = 0.000
I consider environmental concerns to be an important political issue	(+) Québec, p = 0.086 (+) Education, p = 0.049 (-) Income, p = 0.023	(+) Environmental Attitudes, p = 0.000
Overall Environmental Actions	(+) Québec, p = 0.042 (+) Female, p = 0.009 (+) Urban, p = 0.044 (+) Outdoor Occupation, p = 0.021	(+) Environmental Attitudes, p = 0.000

*We ran willingness to agree with these statements against the following demographic categories: Children, Married, Québec, Female, Income, Education Level, Age, Rural, Urban, and whether you have an "outdoor occupation" as listed in Table 8.

Interpretation and Recommendation VII

Our data analysis leads us to several interesting predictions, however two areas interest us most: the question concerning donation to conservation organizations and the overall "environmental behavior scorecard" rating we gave each person (see page 20).

In particular, the data supported the idea that those who are older, have higher educations, and whose occupation is largely outdoors already donate to conservation organizations. These results are not surprising, and largely fit with the current demographics of our community partners' membership. Rather, what is particularly interesting about this information are the instances that do or do not overlap with the previous question about "support of conservation initiatives." Groups that the data suggest support conservation initiatives but do not donate included married people, residents of Québec, and individuals with higher annual incomes. These groups are an ideal category for our community partners to focus on—people who care about the environment but do not yet take action on that belief. ***In particular we would like to suggest that our community partners focus their efforts and membership recruitment on these groups***.

Secondly, we were interested in whether environmental beliefs correlated with environmental behavior. Generally, people from Québec, women, urban people, and people with outdoor occupations are the people whose beliefs and behaviors are most correlated, as suggested by the data. Once again, this is not surprising given the current demographic make-up of these groups; however, understanding who is not in this category is also important. ***Perhaps if our community partners focus on using any of the other recommendations in this report, they will be able to reach people who already have strong concern for the environment and encourage those individuals to act on their concerns in tangible ways***.

5. RESULTS FROM INTERVIEWS

In addition to providing the above recommendations derived from the quantitative survey data, we now invoke the semi-structured interviews in order to provide qualitative information for our community partners. Below, we list each additional recommendation with supporting quotes from our interview transcriptions that encapsulate each suggestion.

Interviewee Profiles

Elise Annes | VT Land Trust | Montpelier, VT
Chris Bray | VT State Senator | New Haven, VT
Jim Douglas | Former VT Governor | Middlebury, VT
Arlyn Foote | Farmer | Cornwall, VT
Elizabeth Fram | Artist | Waterbury Center, VT
David Manelli | McGill University Administrator of Conservation and Academic Affairs | Longueuil, QC
William Poulin-Deltour | Professor | Middlebury, VT; Montréal, QC
Andrea Murray | Architect | Middlebury, VT

Interview Video

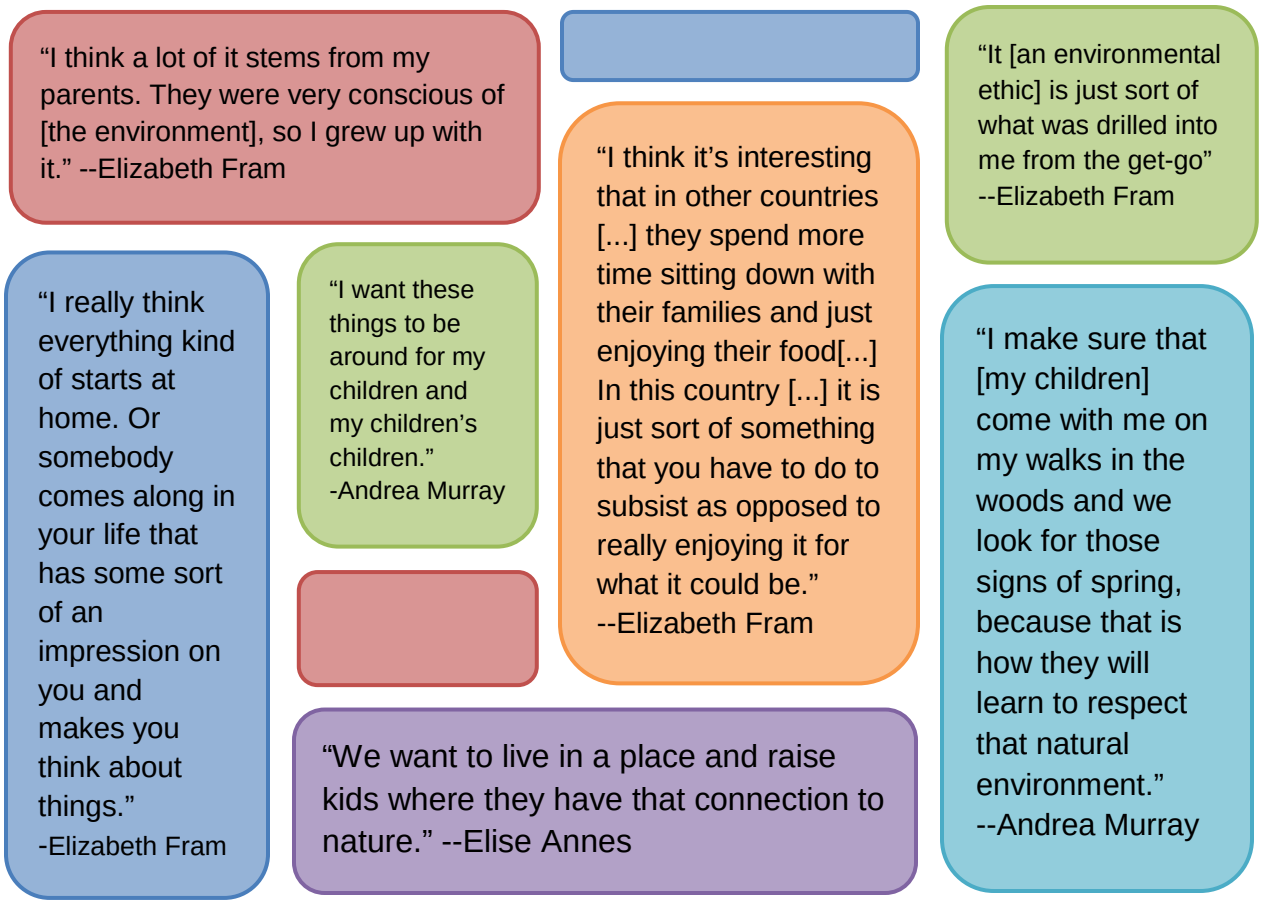
The short film we complied with footage from the interviews we conducted can be viewed using the following link:

http://vimeo.com/65786220

5.1 Families/Education

There were a few fascinating trains of thought that spanned multiple interviews having to do with families and the environment. For example, Elizabeth Fram discusses how her relationship with the environment is largely rooted in her upbringing and the values instilled in her by her parents. In that vein TNC and NCC could focus on encouraging families to similarly introduce their children to the environment at an early age so that they can learn to value and appreciate it in their own ways.

Another important idea to keep in mind is that when people have children, the environment takes on a whole new meaning and significance for them. In other words, as Andrea Murray expressed, the cross-generational implications become much more salient. TNC and NCC would do well to promote environmental education that focuses on the long-term effects of phenomena like climate change in order to reach people who care about their children's ability to enjoy nature in the same ways that they have been able to during their lifetime. Our recommendation would be to focus on families or environmental education when pursuing conservation initiatives.



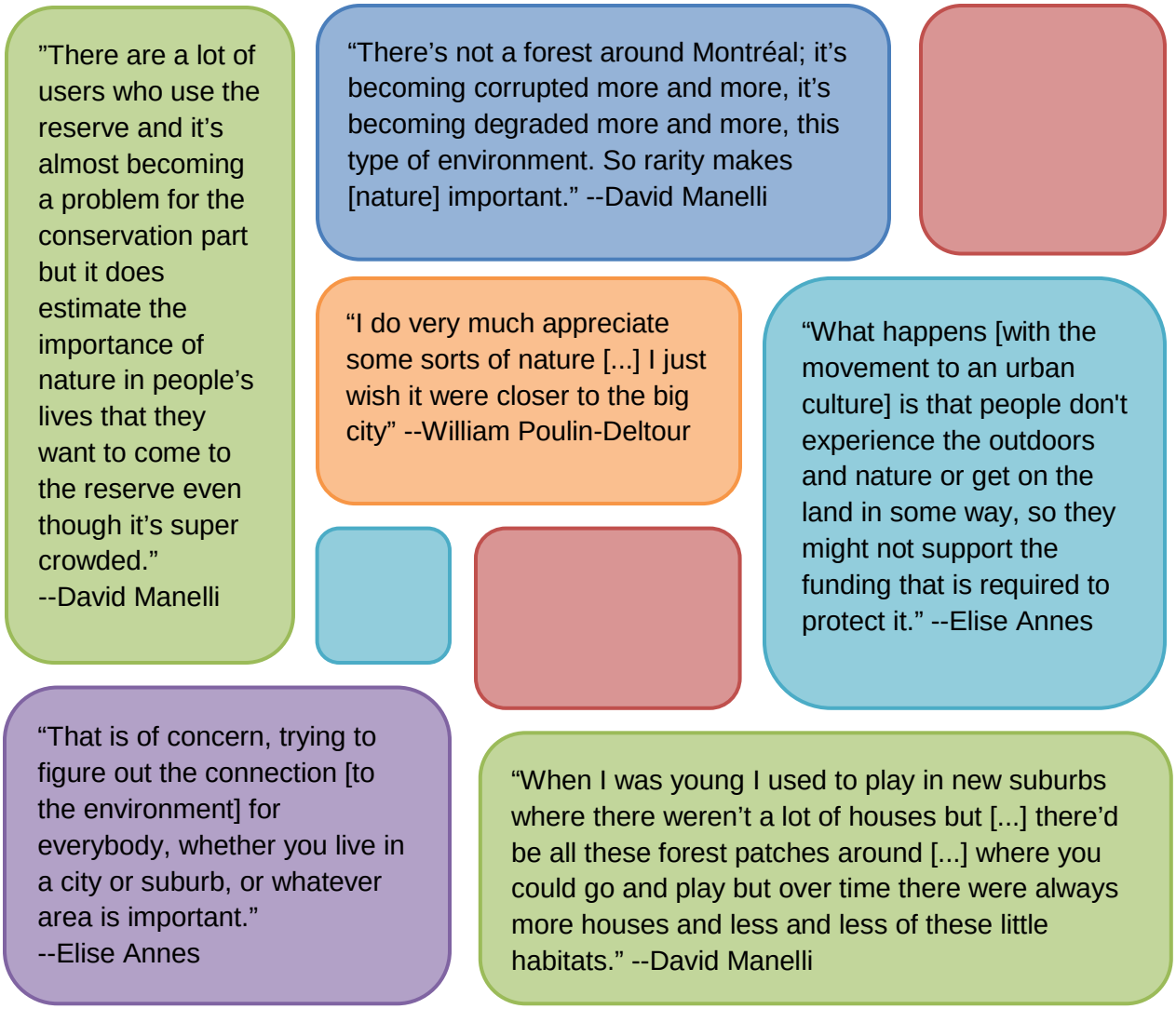
5.2 Framing of Conservation Initiatives

As demonstrated in survey results, people most strongly identify with their state/province. However, they do not tend to feel much of a connection with other states or provinces. Our Vermont interviewees, for instance, do not seem to strongly identify with Québec. As William Poulin-Deltour mentioned "I have them [Vermont and Québec] kind of compartmentalized in my mind as two very different places."

Though this might be the case, many people do seem to feel a strong connection with the landscape in their state. Kate Selby mentions how the topography of Vermont is one of the stronger identifiers that make her feel at home. As such, TNC and NCC should structure their conservation initiatives to concentrate on ecological features that people might associate with their own political boundaries, even if they actually span borders. The Green Mountains, for example, span the border between Vermont and Québec and Vermonters most definitely associate them with their state. They could thus be used to increase support for a conservation initiative that affects both jurisdictions.

5.3 Access to Nature

Although most of our interviewees live in the northern part of Vermont, a mostly rural area containing large tracts of "nature," some of them are from Québec where urbanization is an imminent reality. As such, in order for our community partners to maximize success in their conservation endeavors it will be important for them to focus on urban areas as well. A very salient reality is the widespread urbanization taking place not only in the United States and Canada, but in countries around the world as well. By bolstering their initiatives in urban areas and providing new ways to access nature, TNC and NCC will be able to reach a demographic of people not ordinarily included in the conservation dialog. As the quotes below illustrate, people living in urban—and even suburban—areas are very relevant to such conversations.



5.4 Nature is Inspiring

Though it is sometimes easy to write off the idea of "nature" as an overly romanticized notion, it is difficult to deny that the environment has a significant impact on people's lives. As we discovered through analysis of our survey, many people think of the environment in utilitarian terms. For others, however, such as those quoted below, the environment is an inspiring entity, something that can be incorporated into the initiatives of our community partners in order to better capitalize on people's often close relationships with the world around them.

"I think nature helps me put life into perspective. [...] when spring comes in VT, the ground is hard and brown and you go on that walk in the woods and you see the tiny little leaf of [a] trout lily pushing up through that hardness, you think, 'this is a really strong force.'"
--Andrea Murray

"It is stronger than anything that humans can produce or can pull together. It is an energy that is so regal and so large and we have to respect that and be inspired by that."
--Andrea Murray

"I do [get inspiration from the environment]. Most of my work is pretty abstract but the colors and seasonal changes […], a lot of that is [...] strikingly beautiful, so I made a number of pieces that surround that kind of thing."
--Elizabeth Fram

"It's the little things that catch my attention and it seems that since I'm out and about they tend to be things in the natural world."
--Elizabeth Fram

"I also think that you can look to nature for solutions. Design solutions. And so we might think about how does a polar bear keep himself warm, and can we use those strategies in our buildings?"
--Andrea Murray

"For me it is a real inspiration. Natural systems [...] tend to move in cycles. But then manmade systems are often linear and they don't build in a complete sort of cradle to grave approach in how things are managed and developed." --Chris Bray

5.5 Socioeconomic Diversity

Income does not preclude appreciating the environment, it might simply mean appreciating it in a different way. TNC and NCC should help those unable to travel large distances or pay for expensive equipment to be able to have access to the outdoors. Whether it is walking in a park or smelling the flowers along the sidewalk, any contact with nature can make a huge difference in a person's perception and relationship towards their environment. Such accessible activities are most likely to engage people with their environment since they do not require much effort on anyone's part, yet boost exposure to our environment.

> "I do think that people can be at a huge disadvantage for going on hikes and needing to have the equipment that's so expensive. You know, people are busy and they're on different socio-economic levels; they're going to be thinking about their environment in a different way but I don't think your income precludes you from appreciating it. I think it may just be a different way in terms of how you approach it." --Elizabeth Fram

6. FUTURE CONSIDERATIONS

Our group encountered numerous barriers and limitations when it came to completing this project, the most prominent of which are outlined below. Groups attempting to replicate this process should take these factors under consideration.

Language: Only two out of our six members speak French, and neither is a native speaker. As a result, in translating the survey into French, there were inevitably grammatical and lexical errors made, some of which caused organizations to refrain from distributing the survey.

Time: With only one semester to complete this project, our group was only able to do so much, especially as students with full academic and extracurricular schedules. With more time, our group would have been able to more finely tune the survey, find more means of distributing it, and wait for more responses. Further, we would have been able to seek out more people to interview for our presentation video.

Distance: Conducting a project about a relatively large geographic region whilst living on a college campus meant that we were inevitably geographically disconnected from many of the people directly and indirectly participating in our project. Our schedules, in addition to basic logistics, also precluded us from traveling to Canada to interview people in person. Further, communications with our community partners were limited to email and telephone, with a few exceptions.

Social Position: In seeking out organizations to help us distribute our survey, we found that our efforts were often better received when we announced our indirect affiliation with TNC and NCC. As accredited organizations, their names helped bolster our credibility, since as students our project was likely originally perceived as a mere intellectual exercise, not a legitimate study meant to provide TNC and NCC with information.

Survey Distribution: In order to reach a diverse range of demographics within our focus region, we contacted a variety of organizations, congregations, institutions, and individuals to aid in survey distribution. Reaching a high number of people often required secondary assistance (i.e., requesting that a point-person send the survey out to his or her organization's email list or placing a blurb in a group's e-newsletter). As a result, the process was relatively inefficient due to slow means of communication via e-mail exchanges and difficulty reaching many by telephone. Without a single means of distributing the survey, however, it was the best possible method for our group's situation. We also took advantage of existing public data in order to distribute several hundred paper copies to randomly selected physical addresses in our focus regions in Vermont and Québec through the US Postal Service, however, this method was also inefficient due to the slower turnaround time for individuals to receive and return mail the surveys. Ultimately, we received the most responses from Montréal, but struggled to accrue responses from rural Québec.

Survey Biases: Due to the means of our survey distribution, our survey results have been influenced to some degree. Despite our attempt to reach out to a large diversity of organizations, only some were able to distribute the survey to their members and others never reciprocated our attempts at communication. Beyond that, however, only a small fraction of the individuals who had access to the survey actually took it. Because this group was self-selected, we understand there to be an inherent bias in our survey results. With the exception of the physical distribution of paper copies, there is also unintentional bias insomuch as our survey was accessible only to people who have some form of relationship with the organizations we asked to distribute it. Given our time and resources, it would have been impossible to ensure absolute randomness in the survey's distribution. Furthermore, those selected for interview were also chosen based on the relationships that our group members have in Vermont according to the networks we have cultivated, limiting to some extent our ability to reach out beyond the conventional and expected individuals.

7. CONCLUSIONS

Through the use of a survey and a series of semi-structured interviews, our team addressed four main objectives:

- Develop and implement survey strategies to map Vermont and Québec residents' relationships with and attitudes toward the environment based on regional issues and common activities through which many people in this region are active in their environment.
- Evaluate the survey to determine the scale at which residents care about environmental conservation.
- Evaluate demographic factors that could account for differences in survey results, such as whether people live in Vermont or Québec, whether they live in cities or in rural areas, as well as their age, ethnicity, and income.
- Make recommendations for the scale and focus of conservation priorities based on findings.

These objectives were presented to us by our community partners in order to further their understanding of people's relationships to their environmental space, because this heightened understanding is the key to our partners' ability to accurately define and frame public conservation goals. TNC and NCC hoped to gain awareness about people's relationships to the natural environment so that they can adapt and adjust their conservation goals over time in response to demographic shifts. The focus region for our project included only a small portion of the Northern Appalachian/Acadian Ecoregion, a region that our community partners have defined as containing important ecological processes in need of protection. TNC and NCC need to understand the range of attitudes about nature and how they vary across demographics in order to best gain support and raise awareness about transboundary conservation initiatives in this region.

Our holistic approach integrated both qualitative and quantitative methods in order to allow for a more comprehensive study of the population throughout our target region. Although our sample population represented only a fraction of the residents in the focus region and resulted in inherent biases, we feel that our multi-faceted approach enabled a deep understanding of the demographics of the individuals in the region, the outdoor activities in which they participate, their environmental attitudes and behaviors, and the scales at which they identify with place. We hope our project sheds light on these aspects and will enable our community partners to better define and frame conservation goals in the future.

Through our analysis we were able to draw many conclusions for our community partners which are summarized below.

- As age increases, so does an individual's sense of connection to places at different scales.
- Quebecers are more likely to feel connected to the NAAE, the St. Lawrence Valley ecoregion, and the Southern Mountains.
- Vermonters are more likely to feel connected with the Lake Champlain ecoregion and the Green Mountains.
- Educational level has no impact on an individual's sense of connection to places.
- Rural people are more connected to ecological boundaries.

- Urban people are more connected to political boundaries.
- People with children spend more time playing in fields/parks and swimming/playing in creeks, lakes, and oceans.
- Rural residents spend more time hiking, farming/gardening, and engaging in personal reflection outside.
- Age and income are negatively associated with casual activities outdoors.
- Quebecers and people who are married are more likely to believe that conservation initiatives should protect the environment for society's use or recreation. People with higher incomes tend to disagree.
- The more educated people are, the more likely they are to think that conservation initiatives should be a priority.
- People in outdoor occupations regard the environment as intrinsically valuable.
- The more money one has, the less likely he or she is to think that humans are severely abusing the environment.
- People with positive attitudes towards the environment tend to also have environmentally friendly behaviors.
- People living in urban areas and people with higher incomes are more likely to walk, bike, or carpool and use the public transportation system.

Recommendations:

- Place lesser emphasis on themes of place-based identification when approaching younger individuals and greater emphasis on outdoor activities or ways in which younger generations can recreationally utilize—and thereby gain increased association with—the conservation locations.
- Take advantage of instances of transboundary mentality where it exists for promotion of conservation initiatives.
- Concentrate efforts and membership recruitment on groups who support conservation initiatives but do not yet donate.
- Focus on ecological regions when promoting conservation initiatives in rural environments; focus on political regions when promoting conservation initiatives in urban environments.
- Focus on access to sport-based activities in Québec and resource collection or casual activities in Vermont.
- Create initiatives to specifically target outdoor sporting individuals.
- Focus outreach at levels of place identification based on permanent residence.
- Emphasize the significance of flora and fauna when framing conservation initiatives to individuals with outdoor professions.
- Ensure high income individuals understand effects humans have on the natural environment through increased educational outreach efforts.

While many of these are very specific, we hope that these results and recommendations demonstrate the bigger picture: that flexibility and a true understanding of environmental attitudes and perspectives can truly inform and assist conservation goals. We hope that, through this project, our

community partners and others who read this will be able to learn from the results and will seek to frame their conservation efforts around this better understanding of individual perspectives and beliefs about the environment.

Through this project we hoped to create a replicable process that environmental organizations can use to assess people's attitudes about the environment and to further inform organizations in their outreach. We were able to draw both broad and specific conclusions through the data that we collected, and we envision other organizations using this process as a model for carrying out this process in other regions in order to gain support for environmental initiatives.

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APPENDIX A: The Survey

Place-Based Identity, Perceptions, and Relationships

By taking this survey, you confirm that you are 18 years or older. All questions are optional, you may skip any question that you do not wish to answer.
We are a group of Middlebury College seniors conducting a research project to understand how individuals relate to their surrounding environments throughout Southern Quebec and Northern Vermont.
We appreciate your help and participation! If you have any questions or concerns please feel free to contact us at: mhubbard@middlebury.edu
Thank you for taking our survey!_____
Identité, Perceptions, et Relations avec notre MilieuEn remplissant ce formulaire vous confirmez que vous avez 18 ans ou plus. Toutes les questions sont optionnelles, vous pouvez donc sauter les questions auxquelles vous ne souhaitez pas répondre.
Nous sommes un groupe d'étudiants en dernière année au Middlebury College. Nous sommes en train de réaliser un projet de recherche visant à comprendre comment des individus interagissent avec leur environnement dans le sud du Québec et le nord du Vermont.
Nous vous remercions pour votre aide ! Si vous avez des questions ou soucis, vous pouvez nous contacter à mhubbard@middlebury.edu.

Merci pour votre participation !

Please select your language

- ○ English
- ○ French

Where do you live?

Country

....

State/Province

....

City/Town

....

Do you live in a (n):

- ○ Rural environment
- ○ Suburban environment
- ○ Urban environment

Other

....

Under which of the following occupational categories do you fit?

- ○ Management, Business, and Finance
- ○ Science, Engineering, and Technology
- ○ Healthcare
- ○ Technicians, Production, and Transportation
- ○ Natural Resources and Construction
- ○ Installation, Maintenance, and Repair Craft
- ○ Government and Policy
- ○ Education
- ○ Service and Hospitality
- ○ Sales
- ○ Agriculture activities
- ○ Other Manual Laborer
- ○ Student
- ○ Unemployed

Other

....

Please identify your race:

- ○ Asian
- ○ African American/Black
- ○ Caucasian/White
- ○ First Nations/American Indian
- ○ Hispanic

Other

....

Cultural identity (if from the US, you may skip this question)

- ○ Francophone Québecois
- ○ Anglo-Quebecer

Other

....

Please identify your age category:

- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65+

What is the highest level of education you have attained? If currently a student please select the degree which you are working to obtain.

- ○ High School/ GED / Professional Diploma
- ○ Post-High School Vocational Training/ Apprenticeship (CEGEP)
- ○ Associate's Degree
- ○ Bachelor's Degree
- ○ Graduate Degree (e.g., Ph.D., Master's, M.D.)

Other

....

Please identify your sex:

- ○ Male
- ○ Female

What is your marital/family status?

- ○ Single
- ○ Married/Civil Union
- ○ Widowed

Other

....

Including yourself, how many people live in your permanent residence?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6+

Do you have children?

- ○ Yes
- ○ No

Are you a seasonal resident of Vermont?

- ○ Yes
- ○ No

Are you a seasonal resident of Quebec?

- ○ Yes
- ○ No

What is your annual household income?

- ○ Under $25,000
- ○ $25,000 to $49,999
- ○ $50,000 to $74,999
- ○ $75,000 to $99,999
- ○ $100,000 to $124,999
- ○ $125,000 to $149,999
- ○ Over $150,000

People feel different levels of connection to where they live. How strongly do you feel connected to...							
	A	B	C	D	E	F	G
Your town/city	○	○	○	○	○	○	○
Vermont	○	○	○	○	○	○	○
Quebec	○	○	○	○	○	○	○
Northern Appalachian / Acadian Ecoregion	○	○	○	○	○	○	○
St. Lawrence Valley Ecoregion	○	○	○	○	○	○	○
Lake Champlain Ecoregion	○	○	○	○	○	○	○
Southern Mountains	○	○	○	○	○	○	○
Green Mountains	○	○	○	○	○	○	○
New England	○	○	○	○	○	○	○
Eastern Canada	○	○	○	○	○	○	○
USA	○	○	○	○	○	○	○
Canada	○	○	○	○	○	○	○
North America	○	○	○	○	○	○	○

Legend for rank grid table: People feel different levels of connection to where they live. How strongly do you feel connected to...

Columns:

A - 1. No Connection
B - 2.
C - 3.
D - 4. Moderate Connection
E - 5.
F - 6.
G - 7. Very Strong Connection

How much time do you spend in the following locations?	Never	Once a year	Every few months	A few times a month	Weekly	A few times a week	Daily
My backyard	○	○	○	○	○	○	○
The neighborhood park	○	○	○	○	○	○	○
Rivers and/or lakes	○	○	○	○	○	○	○
The forest/forested areas	○	○	○	○	○	○	○
The ocean/coastal areas	○	○	○	○	○	○	○
National/State/Provincial Parks	○	○	○	○	○	○	○

When you are in each of these locations, to what extent do you feel you are in nature?	A	B	C	D	E	F	G
My backyard	○	○	○	○	○	○	○
The neighborhood park	○	○	○	○	○	○	○
Rivers and/or lakes	○	○	○	○	○	○	○
The forest/forested areas	○	○	○	○	○	○	○
The ocean/coastal areas	○	○	○	○	○	○	○
National/State/Provincial Parks	○	○	○	○	○	○	○

Legend for rank grid table: When you are in each of these locations, to what extent do you feel you are in nature?

Columns:

A - 1. Not at all

B - 2.

C - 3.

D - 4. Somewhat

E - 5.

F - 6.

G - 7. Completely in nature

On average, how many days per year do you participate in the following outdoor activities?					
	0 days	1-10 days	11-50 days	51-100 days	100+ days
Hunting	○	○	○	○	○
Fishing	○	○	○	○	○
Personal Reflection	○	○	○	○	○
Rock Climbing	○	○	○	○	○
Skeet/Target Shooting	○	○	○	○	○
Hiking	○	○	○	○	○
Playing outdoor team sports	○	○	○	○	○
Running/walking outside	○	○	○	○	○
Snowmobiling	○	○	○	○	○
Skiing / Snowshoeing	○	○	○	○	○
Ice-skating or playing hockey outside	○	○	○	○	○
Camping	○	○	○	○	○
Horseback riding	○	○	○	○	○
Walking a pet outside	○	○	○	○	○
Canoeing, kayaking, rafting, or sailing	○	○	○	○	○
Watersports	○	○	○	○	○
All-terrain Vehicle (ATV)	○	○	○	○	○
Playing in fields/parks	○	○	○	○	○
Bird Watching	○	○	○	○	○
Swimming/playing in creeks, lakes, oceans, etc	○	○	○	○	○
Logging/forestry	○	○	○	○	○
Maple sugaring	○	○	○	○	○
Gathering/chopping firewood	○	○	○	○	○
Painting/drawing outside	○	○	○	○	○
Farming/gardening	○	○	○	○	○
Biking	○	○	○	○	○
Beekeeping	○	○	○	○	○
Field Research	○	○	○	○	○

Consider the outdoor activities that you most often engage in. How far are you willing to travel to do any one of them?

- ○ Less than 30 minutes
- ○ 30 minutes - 1 hour
- ○ 1 - 2 hours
- ○ 2 - 3 hours
- ○ 3 - 4 hours
- ○ 4 - 6 hours
- ○ 7 - 10 hours
- ○ More than 10 hours

Are you willing to cross a state/provincial/national border to participate in these activities?

- ○ Yes
- ○ No

Rate your agreement with the following statements:

Conservation initiatives...

	1. Strongly disagree	2.	3.	4. Neutral	5.	6.	7. Strongly agree
...protect my source of income/livelihood	○	○	○	○	○	○	○
...protect the natural environment and biodiversity	○	○	○	○	○	○	○
...protect the environment for society's use/recreation	○	○	○	○	○	○	○
...should not be a priority	○	○	○	○	○	○	○

Rate your agreement with the following statements.							
	1. Strongly disagree	2.	3.	4. Neutral	5.	6.	7. Strongly agree
Human innovation will ensure that we do not make the earth unlivable	○	○	○	○	○	○	○
Humans are severely abusing the environment	○	○	○	○	○	○	○
Plants and animals have as much right as humans to exist	○	○	○	○	○	○	○
Environmental crises have been greatly exaggerated by the media and politicians	○	○	○	○	○	○	○
I'm sympathetic with the efforts of conservation organizations	○	○	○	○	○	○	○
The natural environment has a never-ending supply of resources and should be used as necessary	○	○	○	○	○	○	○
I think endangerment of certain species is an important issue	○	○	○	○	○	○	○
I would only support a conservation initiative if I would personally benefit from it	○	○	○	○	○	○	○
Having access to undeveloped/natural areas is important to me	○	○	○	○	○	○	○

How often do you do the following:							
	A	B	C	D	E	F	G
I recycle	○	○	○	○	○	○	○
I walk, bike and carpool	○	○	○	○	○	○	○
I try to drive less by using public transportation	○	○	○	○	○	○	○
I donate money to environmentally-related NGOs	○	○	○	○	○	○	○
I try to purchase organic/local food and products	○	○	○	○	○	○	○
I consider energy-efficient models when purchasing new appliances and/or vehicles	○	○	○	○	○	○	○
I vote for political candidates based on their environment record	○	○	○	○	○	○	○
I consider environmental concerns to be an important political issue	○	○	○	○	○	○	○

Legend for rank grid table: How often do you do the following:

Columns:

A - 1. Never
B - 2.
C - 3.
D - 4. Sometimes
E - 5.
F - 6.
G - 7. Very often

APPENDIX B: Interview Questions

- Tell me about yourself and what you do. How did you get to where you are today?
- What are your feelings about nature? What is your relation to your surrounding environment?
- What about nature is important to you?
- Do you consider yourself someone who supports conservation initiatives/an environmentalist?
- What's your favorite thing to do outside?
- Can you recall your earliest childhood memory involving nature in some regard?
- Did you spend time in nature as a child? What environment did you grow up in?
- How do you access your surrounding environment nowadays?
- How does your profession/occupation put you in touch with or pull you away from nature?
- At what scale would you say you identify with your environment? For example do you consider yourself a person connected to the forest, an inhabitant of the green mountains, a Vermonter/Québécois, or an inhabitant of the Northern Appalachian/Acadian Ecoregion.
- What are your thoughts for the future?

Table 10a People feel different levels of connection to where they live. How strongly do you feel connected to....

	Your Town/City			Vermont			Quebec			Northern Appalachian/Acadian Ecoregion			St. Lawrence Valley Ecoregion		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.407	0.237	0.087	0.192	0.231	0.407	-0.139	0.235	0.555	-0.154	0.341	0.652	-0.443	0.274	0.107
Married	0.240	0.252	0.342	0.519	0.234	0.028	0.228	0.238	0.339	0.106	0.373	0.776	0.087	0.268	0.747
Canada	-0.329	0.205	0.110	-3.686	0.228	0.000	3.472	0.232	0.000	0.957	0.328	0.004	1.974	0.293	0.000
Female	0.115	0.201	0.567	-0.238	0.206	0.249	0.004	0.201	0.982	-0.612	0.294	0.039	-0.091	0.241	0.705
Income	-0.048	0.069	0.483	-0.189	0.059	0.002	-0.003	0.075	0.964	-0.080	0.101	0.428	0.005	0.087	0.954
Education	-0.121	0.090	0.182	-0.063	0.090	0.484	0.141	0.091	0.123	0.076	0.153	0.619	0.204	0.131	0.123
Age	0.141	0.083	0.091	0.330	0.085	0.000	0.104	0.091	0.257	0.166	0.116	0.153	0.203	0.102	0.047
Rural	0.129	0.292	0.658	0.369	0.280	0.190	0.357	0.262	0.175	0.445	0.376	0.239	0.118	0.336	0.727
Urban	0.980	0.290	0.001	0.746	0.309	0.017	0.943	0.281	0.001	0.132	0.398	0.741	-0.045	0.379	0.905
Outdoor Occupation	-0.084	0.260	0.748	-0.156	0.229	0.496	0.245	0.265	0.355	0.322	0.445	0.470	-0.229	0.300	0.447
n	192			186			185			181			180		
R-squared	0.146			0.664			0.680			0.144			0.349		

Table 10b People feel different levels of connection to where they live. How strongly do you feel connected to....

	Lake Champlain Ecoregion			Green Mountains			Southern Mountains			New England			Eastern Canada		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.143	0.311	0.647	-0.704	0.335	0.037	-0.521	0.285	0.070	-0.398	0.285	0.163	-0.583	0.326	0.076
Married	-0.041	0.322	0.898	0.550	0.305	0.073	0.452	0.293	0.124	0.396	0.308	0.200	0.287	0.302	0.344
Canada	-1.958	0.275	0.000	-2.335	0.278	0.000	0.472	0.254	0.065	-3.096	0.261	0.000	1.363	0.259	0.000
Female	-0.815	0.259	0.002	-0.196	0.241	0.417	-0.051	0.205	0.805	0.103	0.235	0.663	0.426	0.225	0.060
Income	-0.061	0.092	0.509	-0.026	0.089	0.772	-0.131	0.085	0.126	-0.124	0.088	0.161	0.119	0.082	0.149
Education	-0.036	0.122	0.766	-0.140	0.103	0.178	-0.032	0.090	0.722	-0.107	0.095	0.261	-0.002	0.123	0.987
Age	0.429	0.105	0.000	0.198	0.105	0.060	0.155	0.095	0.106	0.266	0.085	0.002	0.163	0.106	0.124
Rural	0.454	0.340	0.183	0.869	0.349	0.014	0.769	0.288	0.008	0.390	0.338	0.250	0.477	0.309	0.125
Urban	0.748	0.357	0.038	0.527	0.374	0.160	0.023	0.295	0.938	0.625	0.353	0.078	0.198	0.324	0.540
Outdoor Occupation	-0.122	0.338	0.718	0.079	0.360	0.827	-0.077	0.334	0.817	-0.203	0.337	0.548	0.182	0.331	0.582
n	180			184			178			180			177		
R-squared	0.313			0.405			0.135			0.527			0.204		

Table 12a. On average, how many days per year do you participate in the following outdoor activities?

	Camping			Walking a pet			Playing in fields/parks			Swimming/playing in creeks, lakes, oceans, etc			Skiing / Snowshoeing		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.049	0.135	0.719	0.100	0.275	0.717	0.416	0.168	0.014	0.240	0.122	0.051	-0.006	0.131	0.961
Married	0.152	0.142	0.286	-0.128	0.266	0.633	0.214	0.149	0.153	0.085	0.146	0.559	-0.003	0.169	0.986
Canada	0.136	0.129	0.294	-0.712	0.252	0.005	-0.357	0.133	0.008	-0.035	0.137	0.797	-0.189	0.143	0.189
Female	-0.016	0.112	0.885	0.124	0.242	0.610	0.090	0.131	0.494	0.228	0.120	0.058	-0.033	0.136	0.809
Income	-0.066	0.039	0.093	0.064	0.080	0.427	-0.061	0.041	0.135	-0.095	0.040	0.020	0.060	0.051	0.243
Education	-0.013	0.065	0.841	0.011	0.115	0.921	0.093	0.063	0.143	0.002	0.053	0.968	0.117	0.069	0.090
Age	-0.187	0.048	0.000	-0.080	0.088	0.366	-0.335	0.060	0.000	-0.132	0.052	0.011	-0.108	0.057	0.061
Rural	0.074	0.155	0.633	0.575	0.350	0.102	-0.174	0.165	0.292	0.245	0.156	0.118	0.220	0.195	0.260
Urban	-0.003	0.153	0.983	-0.498	0.333	0.137	-0.079	0.188	0.676	-0.144	0.174	0.406	-0.242	0.196	0.218
Outdoor Occupation	0.306	0.170	0.073	-0.242	0.294	0.411	-0.102	0.176	0.563	-0.099	0.164	0.548	0.427	0.185	0.022
n	191			187			190			192			190		
R-squared	0.208			0.185			0.285			0.152			0.132		

Table 12b. On average, how many days per year do you participate in the following outdoor activities?

Biking			Canoeing, kayaking, rafting, or sailing			Farming/gardening			Personal Reflection			Hiking			Running/walking outside		
Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
0.086	0.196	0.661	-0.037	0.150	0.805	0.235	0.174	0.180	0.257	0.229	0.264	-0.101	0.166	0.543	-0.067	0.189	0.724
0.334	0.206	0.107	0.237	0.153	0.123	0.344	0.174	0.049	-0.064	0.284	0.824	0.129	0.175	0.464	0.004	0.190	0.984
-0.235	0.200	0.243	-0.098	0.129	0.447	-0.411	0.172	0.018	-0.686	0.205	0.001	0.149	0.155	0.340	-0.530	0.165	0.002
-0.093	0.177	0.601	-0.114	0.127	0.371	0.705	0.153	0.000	0.255	0.189	0.178	0.129	0.128	0.313	0.245	0.154	0.114
-0.068	0.062	0.276	-0.024	0.044	0.584	-0.115	0.054	0.034	-0.266	0.067	0.000	-0.005	0.049	0.911	-0.045	0.051	0.378
0.083	0.073	0.259	-0.026	0.045	0.565	0.040	0.075	0.599	0.046	0.076	0.545	0.015	0.077	0.847	-0.028	0.068	0.677
-0.183	0.071	0.011	-0.149	0.048	0.002	0.025	0.060	0.676	0.109	0.078	0.165	-0.091	0.060	0.129	-0.021	0.064	0.741
-0.171	0.223	0.445	0.189	0.158	0.233	0.466	0.202	0.022	0.665	0.256	0.010	0.457	0.173	0.009	0.243	0.225	0.280
0.511	0.251	0.043	-0.089	0.173	0.607	0.069	0.214	0.746	0.459	0.266	0.086	0.005	0.173	0.978	0.152	0.241	0.530
0.105	0.220	0.634	0.051	0.168	0.763	0.568	0.209	0.007	0.073	0.270	0.785	0.086	0.197	0.663	0.037	0.207	0.860
188			189			191			188			191			189		
0.124			0.121			0.275			0.223			0.086			0.115		

Table 13 Consider the outdoor activities that you most often engage in. How far are you willing to travel to do any one of them?

	Travel			Travel vs Activities		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.476	0.383	0.215	-0.386	0.452	0.395
Married	0.014	0.313	0.965	0.119	0.352	0.736
Canada	0.286	0.363	0.432	0.379	0.409	0.355
Female	-0.405	0.293	0.168	-0.138	0.333	0.679
Income	-0.052	0.099	0.602	-0.080	0.102	0.433
Education	0.102	0.121	0.401	0.108	0.143	0.454
Age	0.008	0.136	0.950	-0.020	0.161	0.900
Rural	0.262	0.444	0.556	-0.462	0.528	0.383
Urban	0.173	0.444	0.698	0.149	0.514	0.773
Outdoor Occupation	0.634	0.464	0.173	0.230	0.457	0.616
Activities						
Sports	.	.	.	0.452	0.447	0.314
Casual	.	.	.	-0.103	0.328	0.754
Resource Collection	.	.	.	0.961	0.577	0.098
n	190			143		
R-squared	0.062			0.121		

Table 14. Are you willing to cross a state/provincial/national border to participate in these activities?

	Border			Border vs Travel			Border vs Travel w/ Demographics		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t
w/ Children	-0.084	0.053	0.110	.	.	.	-0.084	0.058	0.143
Married	0.166	0.062	0.007	.	.	.	0.183	0.062	0.003
Canada	-0.168	0.054	0.002	.	.	.	-0.183	0.057	0.001
Female	-0.089	0.044	0.042	.	.	.	-0.063	0.043	0.142
Income	-0.036	0.016	0.026	.	.	.	-0.035	0.016	0.027
Education	-0.004	0.021	0.870	.	.	.	-0.010	0.021	0.646
Age	0.008	0.018	0.649	.	.	.	0.011	0.020	0.594
Rural	-0.012	0.061	0.838	.	.	.	-0.039	0.064	0.538
Urban	0.070	0.068	0.300	.	.	.	0.046	0.068	0.497
Outdoor Occupation	-0.002	0.060	0.970	.	.	.	-0.032	0.060	0.592
Travel	.	.	.	0.041	0.016	0.011	0.041	0.017	0.015
n	192			209			188		
R-squared	0.046			0.016			0.007		

Table 15a Conservation initiatives…

	…protect my source of income/livelihood			Income vs Donate			Income vs Activities			Income vs Occupations		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.554	0.292	0.060	0.561	0.317	0.078	0.431	0.319	0.179	0.534	0.294	0.071
Married	-0.240	0.362	0.509	-0.184	0.349	0.598	-0.452	0.336	0.180	-0.305	0.354	0.390
Canada	0.416	0.303	0.171	0.421	0.288	0.145	0.555	0.325	0.090	0.362	0.316	0.252
Female	-0.007	0.274	0.980	-0.069	0.259	0.792	-0.112	0.297	0.706	0.002	0.273	0.995
Income	-0.107	0.092	0.244	-0.154	0.093	0.098	0.009	0.098	0.930	-0.089	0.092	0.334
Education	0.138	0.115	0.234	0.055	0.127	0.667	0.076	0.130	0.560	0.127	0.122	0.296
Age	-0.282	0.110	0.011	-0.388	0.105	0.000	-0.073	0.110	0.509	-0.335	0.128	0.009
Rural	0.037	0.320	0.908	0.184	0.329	0.576	-0.111	0.379	0.771	0.041	0.329	0.901
Urban	-0.064	0.373	0.864	-0.114	0.356	0.749	-0.052	0.435	0.905	-0.044	0.373	0.906
Outdoor Occupation	0.979	0.349	0.006	0.507	0.373	0.176	0.786	0.421	0.064			
Donate	.	.	.	0.310	0.070	0.000	.	.	.	.	.	.
Activities												
Sports	.	.	.	.	.	.	1.614	0.405	0.000	.	.	.
Casual	.	.	.	.	.	.	0.186	0.300	0.537	.	.	.
Resource Collection	.	.	.	.	.	.	0.631	0.337	0.063	.	.	.
Occupations												
Indoor (Private)	.	.	.	.	.	.	.	.	.	-0.970	0.465	0.039
Indoor (Public)	.	.	.	.	.	.	.	.	.	-1.060	0.377	0.005
Artist	.	.	.	.	.	.	.	.	.	-0.745	0.801	0.354
Student	.	.	.	.	.	.	.	.	.	-1.411	0.591	0.018
Unemployed	.	.	.	.	.	.	.	.	.	-1.001	0.838	0.234
Retired	.	.	.	.	.	.	.	.	.	-0.484	0.550	0.380
n	188			186			143			188		
R-squared	0.122			0.216			0.284			0.131		

Table 15b Conservation initiatives…

	…protect the natural environment and biodiversity			Natural environment vs Donate			Natural environment vs Activities			Natural environment vs Occupations		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.092	0.182	0.615	0.083	0.181	0.647	0.111	0.269	0.680	0.072	0.190	0.707
Married	0.286	0.194	0.142	0.306	0.201	0.130	0.243	0.217	0.264	0.267	0.184	0.150
Canada	0.310	0.150	0.041	0.304	0.149	0.042	0.475	0.209	0.025	0.269	0.152	0.079
Female	0.072	0.158	0.652	0.055	0.151	0.714	0.093	0.221	0.674	0.102	0.162	0.528
Income	-0.020	0.052	0.702	-0.037	0.053	0.489	-0.022	0.062	0.718	-0.019	0.048	0.691
Education	0.056	0.053	0.287	0.020	0.049	0.681	0.037	0.062	0.549	0.021	0.064	0.739
Age	0.022	0.068	0.752	-0.020	0.064	0.757	0.045	0.102	0.658	0.019	0.066	0.774
Rural	-0.026	0.166	0.877	0.027	0.164	0.868	-0.094	0.241	0.696	-0.028	0.163	0.864
Urban	0.060	0.189	0.752	0.039	0.191	0.838	0.041	0.258	0.873	0.055	0.202	0.786
Outdoor Occupation	-0.006	0.181	0.974	-0.188	0.173	0.279	-0.072	0.228	0.751			
Donate	.	.	.	0.125	0.036	0.001	.	.	.	.	.	.
Activities												
Sports	.	.	.	.	.	.	0.572	0.342	0.096	.	.	.
Casual	.	.	.	.	.	.	0.167	0.158	0.293	.	.	.
Resource Collection	.	.	.	.	.	.	-0.160	0.312	0.608	.	.	.
Occupations												
Indoor (Private)	.	.	.	.	.	.	.	.	.	-0.056	0.246	0.820
Indoor (Public)	.	.	.	.	.	.	.	.	.	0.068	0.185	0.716
Artist	.	.	.	.	.	.	.	.	.	-0.508	0.851	0.551
Student	.	.	.	.	.	.	.	.	.	-0.194	0.442	0.662
Unemployed	.	.	.	.	.	.	.	.	.	-0.486	0.869	0.576
Retired	.	.	.	.	.	.	.	.	.	0.186	0.237	0.433
n	190			188			143			190		
R-squared	0.063			0.110			0.115			0.078		

Table 15c Conservation initiatives…

	…protect the environment for society's use/recreation			Use/Recreation vs Donate			Use/Recreation vs Activities			Use/Recreation vs Occupations		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.114	0.185	0.537	0.113	0.180	0.530	0.242	0.242	0.320	0.091	0.188	0.630
Married	0.431	0.202	0.034	0.450	0.206	0.031	0.444	0.218	0.043	0.370	0.183	0.044
Canada	0.348	0.171	0.043	0.343	0.172	0.048	0.454	0.188	0.017	0.284	0.172	0.101
Female	0.120	0.164	0.467	0.098	0.156	0.531	0.075	0.209	0.721	0.143	0.162	0.376
Income	-0.131	0.059	0.028	-0.150	0.058	0.011	-0.123	0.061	0.046	-0.135	0.050	0.008
Education	0.031	0.064	0.625	-0.003	0.058	0.960	0.079	0.067	0.243	-0.001	0.072	0.987
Age	0.016	0.075	0.833	-0.028	0.072	0.698	0.020	0.096	0.835	-0.033	0.070	0.640
Rural	-0.088	0.184	0.633	-0.032	0.180	0.858	-0.134	0.250	0.591	-0.077	0.184	0.677
Urban	0.042	0.186	0.822	0.019	0.182	0.917	0.045	0.252	0.858	0.056	0.201	0.780
Outdoor Occupation	-0.221	0.235	0.349	-0.412	0.230	0.075	-0.150	0.192	0.435			
Donate	.	.	.	0.128	0.038	0.001	.	.	.	.	.	.
Activities												
Sports	.	.	.	.	.	.	0.562	0.333	0.094	.	.	.
Casual	.	.	.	.	.	.	0.109	0.151	0.472	.	.	.
Resource Collection	.	.	.	.	.	.	-0.015	0.272	0.955	.	.	.
Occupations												
Indoor Occupations (Private)	.	.	.	.	.	.	.	.	.	0.530	0.280	0.060
Indoor Occupations (Public)	.	.	.	.	.	.	.	.	.	0.245	0.236	0.301
Artist	.	.	.	.	.	.	.	.	.	-0.181	0.900	0.841
Student	.	.	.	.	.	.	.	.	.	-0.415	0.441	0.349
Unemployed	.	.	.	.	.	.	.	.	.	-0.476	0.689	0.490
Retired	.	.	.	.	.	.	.	.	.	0.340	0.272	0.212
n	189			187			143			189		
R-squared	0.087			0.130			0.165			0.131		

Table 15d Conservation initiatives…

	…should not be a priority			Not priority vs Donate			Not priority vs Activities			Not priority vs Occupations		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.220	0.202	0.279	-0.224	0.203	0.270	-0.506	0.246	0.042	-0.229	0.204	0.262
Married	-0.480	0.238	0.045	-0.485	0.239	0.044	-0.513	0.292	0.081	-0.465	0.227	0.042
Canada	-0.349	0.231	0.133	-0.361	0.235	0.126	-0.446	0.280	0.114	-0.335	0.246	0.174
Female	0.110	0.212	0.605	0.120	0.212	0.573	0.052	0.293	0.861	0.110	0.215	0.611
Income	0.107	0.070	0.127	0.109	0.072	0.131	0.148	0.083	0.076	0.112	0.067	0.097
Education	-0.158	0.090	0.083	-0.155	0.092	0.095	-0.238	0.101	0.020	-0.162	0.101	0.109
Age	-0.018	0.081	0.824	-0.014	0.080	0.859	0.054	0.117	0.646	0.009	0.075	0.904
Rural	-0.106	0.268	0.692	-0.118	0.267	0.658	-0.251	0.382	0.512	-0.112	0.271	0.680
Urban	-0.230	0.255	0.367	-0.217	0.256	0.398	-0.363	0.336	0.283	-0.250	0.258	0.333
Outdoor Occupation	0.398	0.327	0.225	0.422	0.301	0.162	0.591	0.429	0.171			
Donate	.	.	.	-0.015	0.054	0.781	.	.	.	.	.	.
Activities												
Sports	.	.	.	.	.	.	-0.751	0.457	0.103	.	.	.
Casual	.	.	.	.	.	.	0.332	0.280	0.237	.	.	.
Resource Collection	.	.	.	.	.	.	-0.152	0.284	0.593	.	.	.
Occupations												
Indoor Occupations (Private)	.	.	.	.	.	.	.	.	.	-0.691	0.352	0.051
Indoor Occupations (Public)	.	.	.	.	.	.	.	.	.	-0.362	0.343	0.293
Artist	.	.	.	.	.	.	.	.	.	-0.436	0.526	0.409
Student	.	.	.	.	.	.	.	.	.	-0.191	0.573	0.739
Unemployed	.	.	.	.	.	.	.	.	.	0.046	0.867	0.958
Retired	.	.	.	.	.	.	.	.	.	-0.359	0.399	0.369
n	187			185			142			187		
R-squared	0.085			0.085			0.157			0.095		

Table 16a. Environmental Attitudes

	Human innovation will ensure that we do not make the earth unlivable			Humans are severely abusing the environment			Plants and animals have as much right as humans to exist			Environmental crises have been greatly exaggerated by the media and politicians			I'm sympathetic with the efforts of conservation organizations		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.055	0.333	0.869	-0.149	0.235	0.526	0.125	0.203	0.539	-0.229	0.227	0.316	0.137	0.172	0.428
Married	-0.306	0.334	0.361	0.368	0.209	0.080	0.423	0.249	0.091	-0.472	0.234	0.045	0.428	0.186	0.023
Canada	-0.169	0.307	0.581	0.057	0.185	0.757	0.177	0.175	0.311	-0.062	0.188	0.740	0.245	0.127	0.057
Female	-0.172	0.275	0.532	-0.039	0.197	0.845	0.145	0.187	0.438	-0.142	0.202	0.484	-0.034	0.165	0.836
Income	0.047	0.085	0.579	-0.144	0.063	0.022	-0.254	0.065	0.000	0.215	0.075	0.004	-0.128	0.049	0.010
Education	-0.140	0.125	0.264	-0.022	0.084	0.791	0.086	0.097	0.378	-0.099	0.097	0.310	0.156	0.072	0.032
Age	0.034	0.116	0.769	0.029	0.083	0.732	0.009	0.075	0.900	-0.077	0.085	0.364	0.098	0.066	0.141
Rural	0.003	0.376	0.993	-0.045	0.245	0.854	-0.304	0.233	0.194	0.367	0.272	0.179	-0.228	0.166	0.171
Urban	-0.382	0.409	0.351	0.420	0.213	0.050	-0.365	0.234	0.120	-0.258	0.282	0.361	0.076	0.192	0.691
Outdoor Occupation	-0.198	0.364	0.587	-0.002	0.244	0.994	0.407	0.195	0.038	0.120	0.292	0.683	0.347	0.151	0.023
n	190			193			193			193			193		
R-squared	0.034			0.065			0.151			0.111			0.165		

Table 16.b Environmental Attitudes

	The natural environment has a never-ending supply of resources and should be used as necessary			I think endangerment of certain species is an important issue			I would only support a conservation initiative if I would personally benefit from it			Having access to undeveloped/natural areas is important to me			Overall Environmental Attitudes		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.303	0.204	0.139	0.530	0.215	0.015	0.170	0.189	0.367	0.290	0.222	0.193	0.113	0.132	0.392
Married	-0.488	0.245	0.048	0.257	0.205	0.211	-0.368	0.236	0.120	0.274	0.253	0.279	0.389	0.164	0.019
Canada	0.618	0.204	0.003	0.337	0.156	0.031	0.162	0.183	0.377	0.235	0.195	0.230	0.082	0.101	0.416
Female	0.086	0.185	0.644	-0.089	0.164	0.588	-0.231	0.184	0.211	-0.053	0.201	0.793	0.013	0.121	0.912
Income	0.124	0.062	0.047	-0.085	0.059	0.152	0.157	0.067	0.020	-0.175	0.072	0.016	-0.142	0.041	0.001
Education	-0.023	0.089	0.793	0.137	0.089	0.126	-0.128	0.098	0.191	0.054	0.092	0.554	0.113	0.058	0.055
Age	0.090	0.088	0.309	0.007	0.078	0.930	-0.248	0.066	0.000	-0.006	0.082	0.945	0.037	0.050	0.459
Rural	0.136	0.217	0.530	0.234	0.215	0.277	0.067	0.226	0.768	0.494	0.303	0.104	-0.090	0.135	0.508
Urban	-0.054	0.236	0.819	0.384	0.224	0.088	-0.008	0.252	0.975	0.244	0.330	0.461	0.159	0.115	0.169
Outdoor Occupation	-0.043	0.229	0.852	0.159	0.203	0.436	-0.420	0.195	0.032	0.281	0.188	0.136	0.173	0.119	0.149
n	192			192			194			191			180		
R-squared	0.090			0.124			0.122			0.096			0.166		

Table 17a. Environmental Attitudes vs Activities

	Human innovation will ensure that we do not make the earth unlivable			Humans are severely abusing the environment			Plants and animals have as much right as humans to exist			Environmental crises have been greatly exaggerated by the media and politicians			I'm sympathetic with the efforts of conservation organizations		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.333	0.374	0.375	-0.306	0.277	0.272	0.132	0.232	0.571	-0.265	0.212	0.211	0.176	0.208	0.399
Married	-0.219	0.377	0.562	0.309	0.224	0.170	0.369	0.261	0.160	-0.430	0.242	0.078	0.416	0.211	0.051
Canada	-0.431	0.341	0.209	0.111	0.228	0.627	0.401	0.225	0.077	0.218	0.197	0.269	0.230	0.185	0.214
Female	0.023	0.300	0.939	0.131	0.246	0.596	0.232	0.238	0.330	0.046	0.227	0.839	0.048	0.212	0.821
Income	0.054	0.087	0.536	-0.153	0.084	0.070	-0.260	0.066	0.000	0.200	0.081	0.015	-0.163	0.054	0.003
Education	-0.105	0.149	0.479	-0.013	0.094	0.891	0.145	0.100	0.148	-0.184	0.099	0.066	0.182	0.075	0.017
Age	-0.051	0.135	0.707	0.101	0.107	0.345	0.028	0.102	0.787	-0.018	0.110	0.870	0.109	0.096	0.257
Rural	0.162	0.452	0.720	-0.217	0.337	0.521	-0.477	0.293	0.106	-0.122	0.343	0.723	-0.176	0.226	0.438
Urban	-0.674	0.476	0.160	0.243	0.241	0.315	-0.513	0.255	0.047	-0.485	0.328	0.141	0.054	0.246	0.827
Outdoor Occupation	0.381	0.470	0.419	0.117	0.253	0.644	0.331	0.272	0.225	-0.312	0.243	0.202	0.277	0.168	0.102
Activities															
Sports	-0.088	0.449	0.845	0.487	0.382	0.204	0.165	0.342	0.630	-0.116	0.383	0.763	0.579	0.321	0.073
Casual	-0.603	0.293	0.041	-0.312	0.231	0.179	-0.062	0.210	0.768	0.564	0.272	0.040	-0.404	0.214	0.061
Resource Collection	0.086	0.473	0.855	0.574	0.346	0.099	0.293	0.301	0.332	0.041	0.272	0.880	0.382	0.204	0.063
n	141			144			145			144			144		
R-squared	0.097			0.146			0.190			0.140			0.211		

Table 17b. Environmental Attitudes vs Activities

	The natural environment has a never-ending supply of resources and should be used as necessary			I think endangerment of certain species is an important issue			I would only support a conservation initiative if I would personally benefit from it			Having access to undeveloped/natural areas is important to me			Overall Environmental Attitudes		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.106	0.202	0.600	0.531	0.279	0.059	0.089	0.235	0.706	0.300	0.228	0.191	0.130	0.146	0.375
Married	-0.446	0.268	0.099	0.313	0.221	0.159	-0.084	0.244	0.731	0.092	0.287	0.749	0.280	0.160	0.083
Canada	0.539	0.274	0.051	0.450	0.216	0.040	0.131	0.241	0.588	0.563	0.231	0.016	0.163	0.129	0.208
Female	0.003	0.251	0.991	0.055	0.214	0.796	-0.461	0.255	0.073	0.193	0.254	0.448	0.067	0.162	0.681
Income	0.114	0.071	0.107	-0.110	0.067	0.102	0.206	0.086	0.018	-0.164	0.088	0.066	-0.148	0.044	0.001
Education	0.024	0.113	0.834	0.154	0.093	0.099	-0.078	0.100	0.437	-0.002	0.101	0.985	0.132	0.056	0.019
Age	-0.018	0.113	0.874	0.011	0.111	0.920	-0.311	0.087	0.001	0.092	0.096	0.336	0.080	0.074	0.281
Rural	0.328	0.308	0.288	0.252	0.247	0.310	0.150	0.265	0.573	0.326	0.420	0.439	-0.118	0.185	0.523
Urban	0.054	0.289	0.852	0.373	0.263	0.159	0.161	0.285	0.573	0.273	0.427	0.523	0.177	0.155	0.255
Outdoor Occupation	-0.020	0.313	0.949	0.037	0.256	0.885	-0.435	0.267	0.105	-0.084	0.271	0.756	0.131	0.172	0.450
Activities															
Sports	-0.071	0.412	0.863	0.692	0.335	0.041	-0.692	0.379	0.070	0.480	0.416	0.250	-0.061	0.132	0.644
Casual	-0.056	0.171	0.745	-0.104	0.267	0.697	0.281	0.283	0.322	0.297	0.218	0.175	0.407	0.299	0.177
Resource Collection	-0.351	0.207	0.092	0.032	0.297	0.913	-0.340	0.363	0.350	0.648	0.251	0.011	0.295	0.160	0.068
n	144			143			145			143			134		
R-squared	0.079			0.169			0.187			0.212			0.235		

Table 18a. Environmental Attitudes vs Donate

	Human innovation will ensure that we do not make the earth unlivable			Humans are severely abusing the environment			Plants and animals have as much right as humans to exist			Environmental crises have been greatly exaggerated by the media and politicians			I'm sympathetic with the efforts of conservation organizations		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.058	0.334	0.862	-0.163	0.233	0.486	0.109	0.201	0.587	-0.216	0.224	0.336	0.124	0.164	0.450
Married	-0.320	0.336	0.342	0.374	0.209	0.076	0.458	0.249	0.067	-0.475	0.233	0.043	0.455	0.182	0.013
Canada	-0.160	0.311	0.607	0.037	0.186	0.841	0.159	0.172	0.356	-0.038	0.191	0.844	0.230	0.127	0.071
Female	-0.170	0.277	0.539	-0.051	0.192	0.790	0.133	0.185	0.474	-0.148	0.203	0.468	-0.056	0.156	0.722
Income	0.058	0.089	0.517	-0.158	0.062	0.012	-0.270	0.062	0.000	0.222	0.076	0.004	-0.152	0.046	0.001
Education	-0.131	0.121	0.280	-0.053	0.081	0.514	0.045	0.098	0.647	-0.081	0.097	0.402	0.111	0.064	0.087
Age	0.044	0.119	0.713	-0.011	0.076	0.884	-0.041	0.074	0.582	-0.057	0.081	0.487	0.043	0.061	0.488
Rural	-0.012	0.379	0.974	-0.002	0.245	0.995	-0.256	0.235	0.278	0.353	0.275	0.200	-0.158	0.157	0.314
Urban	-0.403	0.410	0.327	0.400	0.222	0.073	-0.390	0.235	0.099	-0.263	0.284	0.357	0.061	0.189	0.748
Outdoor Occupation	-0.135	0.378	0.721	-0.143	0.231	0.536	0.222	0.208	0.286	0.193	0.306	0.529	0.106	0.154	0.491
Donate	-0.032	0.073	0.663	0.113	0.043	0.009	0.135	0.049	0.006	-0.056	0.059	0.338	0.163	0.038	0.000
n	188			191			191			191			191		
R-squared	0.036			0.091			0.185			0.117			0.232		

Table 18b. Environmental Attitudes vs Donate

	The natural environment has a never-ending supply of resources and should be used as necessary			I think endangerment of certain species is an important issue			I would only support a conservation initiative if I would personally benefit from it			Having access to undeveloped/natural areas is important to me			Overall Environmental Attitudes		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	-0.298	0.204	0.147	0.514	0.213	0.017	0.179	0.192	0.352	0.291	0.221	0.190	0.093	0.127	0.465
Married	-0.482	0.246	0.051	0.273	0.208	0.190	-0.392	0.227	0.085	0.283	0.259	0.276	0.422	0.166	0.012
Canada	0.627	0.207	0.003	0.330	0.158	0.038	0.162	0.180	0.369	0.241	0.198	0.226	0.061	0.100	0.544
Female	0.081	0.185	0.660	-0.103	0.164	0.533	-0.202	0.176	0.252	-0.066	0.196	0.739	0.008	0.116	0.947
Income	0.122	0.062	0.050	-0.097	0.058	0.095	0.177	0.065	0.007	-0.180	0.075	0.017	-0.155	0.040	0.000
Education	-0.018	0.088	0.841	0.108	0.089	0.227	-0.080	0.094	0.399	0.042	0.092	0.652	0.087	0.052	0.097
Age	0.099	0.085	0.245	-0.025	0.078	0.746	-0.186	0.069	0.007	-0.024	0.081	0.765	-0.001	0.046	0.988
Rural	0.135	0.217	0.534	0.273	0.212	0.199	-0.012	0.220	0.957	0.521	0.298	0.082	-0.054	0.135	0.689
Urban	-0.042	0.237	0.858	0.369	0.228	0.107	0.044	0.251	0.862	0.218	0.336	0.517	0.143	0.120	0.236
Outdoor Occupation	-0.030	0.243	0.901	0.020	0.205	0.923	-0.172	0.199	0.389	0.208	0.195	0.288	0.040	0.123	0.747
Donate	-0.021	0.041	0.612	0.097	0.046	0.037	-0.180	0.050	0.000	0.056	0.059	0.344	0.102	0.030	0.001
n	190			190			192			189			178		
R-squared	0.092			0.140			0.181			0.100			0.216		

Table 19a. Environmental Actions

	I recycle			I walk, bike and carpool whenever I can			I try to drive less by using public transportation			I regularly donate money to environmentally-related NGOs			I try to purchase organic/local food and products		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.171	0.171	0.321	0.038	0.295	0.898	-0.175	0.369	0.637	0.041	0.352	0.907	-0.160	0.267	0.549
Married	0.065	0.177	0.714	0.133	0.317	0.676	-0.647	0.378	0.088	-0.178	0.342	0.603	0.540	0.271	0.048
Canada	0.053	0.068	0.441	0.346	0.215	0.110	1.468	0.331	0.000	-0.011	0.312	0.973	-0.304	0.258	0.240
Female	0.178	0.115	0.124	0.287	0.222	0.197	0.785	0.297	0.009	0.186	0.290	0.522	0.672	0.235	0.005
Income	-0.039	0.037	0.292	0.158	0.075	0.037	0.239	0.102	0.021	0.139	0.098	0.156	-0.168	0.079	0.034
Education	-0.017	0.038	0.652	-0.089	0.115	0.440	0.041	0.151	0.788	0.270	0.152	0.077	0.092	0.124	0.459
Age	-0.022	0.065	0.731	-0.055	0.102	0.592	-0.096	0.127	0.449	0.329	0.108	0.003	-0.007	0.093	0.937
Rural	-0.197	0.116	0.093	-0.265	0.296	0.372	-0.126	0.362	0.729	-0.467	0.342	0.174	0.417	0.370	0.261
Urban	-0.116	0.120	0.335	0.823	0.319	0.011	0.748	0.415	0.073	0.205	0.405	0.614	0.526	0.414	0.206
Outdoor Occupation	0.041	0.128	0.748	0.795	0.257	0.002	-0.107	0.370	0.772	1.477	0.369	0.000	0.108	0.284	0.704
n	194			193			191			192			193		
R-squared	0.049			0.163			0.227			0.189			0.112		

Table 19b. Environmental Actions

	I consider energy-efficient models when purchasing new appliances and/or vehicles			I vote for political candidates based on their environment record			I consider environmental concerns to be an important political issue			Overall Environmental Actions		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.120	0.235	0.610	0.345	0.263	0.191	0.028	0.171	0.870	0.079	0.159	0.622
Married	0.375	0.251	0.136	0.160	0.279	0.568	0.323	0.207	0.120	0.117	0.159	0.461
Canada	-0.320	0.218	0.144	0.266	0.190	0.164	0.232	0.134	0.086	0.273	0.133	0.042
Female	0.166	0.188	0.378	0.116	0.213	0.586	0.053	0.166	0.748	0.364	0.137	0.009
Income	-0.075	0.061	0.222	-0.103	0.073	0.160	-0.124	0.054	0.023	0.005	0.045	0.909
Education	0.105	0.090	0.247	0.231	0.122	0.059	0.155	0.078	0.049	0.085	0.069	0.220
Age	0.203	0.087	0.021	0.082	0.089	0.363	0.095	0.066	0.153	0.045	0.054	0.405
Rural	-0.345	0.248	0.166	-0.101	0.260	0.699	0.144	0.273	0.599	-0.107	0.156	0.494
Urban	-0.041	0.235	0.862	0.362	0.260	0.165	0.357	0.266	0.182	0.330	0.163	0.044
Outdoor Occupation	0.339	0.209	0.106	0.202	0.242	0.404	0.297	0.176	0.092	0.356	0.153	0.021
n	193			193			194			185		
R-squared	0.113			0.099			0.121			0.169		

Table 20a. Environmental Actions vs Overall Environmental Attitudes

	I recycle			I walk, bike and carpool whenever I can			I try to drive less by using public transportation			I regularly donate money to environmentally-related NGOs			I try to purchase organic/local food and products		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.112	0.182	0.541	-0.063	0.293	0.830	-0.315	0.368	0.393	0.073	0.351	0.835	-0.231	0.277	0.406
Married	-0.076	0.162	0.640	0.128	0.315	0.686	-0.381	0.375	0.312	-0.599	0.351	0.089	0.361	0.300	0.230
Canada	0.019	0.073	0.796	0.195	0.220	0.378	1.237	0.331	0.000	0.047	0.308	0.880	-0.333	0.281	0.237
Female	0.170	0.104	0.103	0.341	0.227	0.134	0.910	0.307	0.003	0.114	0.287	0.693	0.646	0.243	0.009
Income	0.023	0.032	0.470	0.217	0.076	0.005	0.258	0.114	0.025	0.233	0.099	0.020	-0.087	0.081	0.284
Education	-0.067	0.045	0.138	-0.118	0.117	0.314	0.066	0.149	0.655	0.179	0.152	0.240	0.032	0.128	0.804
Age	-0.046	0.062	0.462	-0.080	0.100	0.427	-0.133	0.125	0.287	0.330	0.109	0.003	-0.026	0.098	0.790
Rural	-0.172	0.105	0.101	-0.299	0.303	0.326	-0.216	0.366	0.556	-0.358	0.355	0.314	0.522	0.376	0.166
Urban	-0.166	0.133	0.214	0.805	0.335	0.017	0.881	0.428	0.041	0.100	0.418	0.811	0.443	0.431	0.305
Outdoor Occupation	-0.059	0.148	0.692	0.807	0.263	0.002	-0.049	0.383	0.899	1.280	0.382	0.001	0.064	0.303	0.833
Overall En. Attitudes	0.448	0.177	0.012	0.286	0.207	0.168	0.091	0.186	0.625	0.623	0.171	0.000	0.466	0.141	0.001
n	180			179			177			178			179		
R-squared	0.238			0.199			0.245			0.247			0.145		

Table 20b. Environmental Actions vs Overall Environmental Attitudes

	I consider energy-efficient models when purchasing new appliances and/or vehicles			I vote for political candidates based on their environment record			I consider environmental concerns to be an important political issue			Overall Environmental Actions		
	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|	Coef.	SE	P>|t|
w/ Children	0.061	0.245	0.803	0.180	0.226	0.427	-0.084	0.145	0.564	-0.021	0.153	0.890
Married	0.153	0.245	0.534	-0.158	0.254	0.534	-0.067	0.182	0.714	-0.042	0.150	0.781
Canada	-0.290	0.228	0.205	0.140	0.173	0.421	0.198	0.126	0.118	0.190	0.141	0.180
Female	0.174	0.180	0.334	0.179	0.179	0.320	-0.003	0.131	0.983	0.372	0.124	0.003
Income	0.008	0.061	0.895	0.065	0.063	0.305	0.021	0.047	0.654	0.091	0.043	0.036
Education	-0.018	0.092	0.845	0.082	0.092	0.376	0.058	0.062	0.350	0.011	0.059	0.848
Age	0.191	0.087	0.030	0.037	0.075	0.625	0.055	0.051	0.279	0.020	0.049	0.688
Rural	-0.301	0.257	0.243	-0.053	0.220	0.810	0.253	0.244	0.300	-0.076	0.154	0.624
Urban	-0.143	0.234	0.541	0.222	0.225	0.326	0.237	0.248	0.340	0.272	0.168	0.106
Outdoor Occupation	0.225	0.217	0.299	0.151	0.237	0.524	0.141	0.179	0.432	0.296	0.156	0.059
Overall En. Attitudes	0.603	0.137	0.000	1.094	0.146	0.000	0.947	0.072	0.000	0.567	0.087	0.000
n	179			179			180			171		
R-squared	0.223			0.394			0.478			0.372		

APPENDIX D: Survey Outreach Strategies

Groups who distributed the survey

Organizations
Front Porch Forum
- Burlington
- Waterbury Center
- Stowe

Vermont Audubon
The Vermont Land Trusts
New England Organic Farmers
The Center for an Agricultural Economy
Bolton Valley
Johnson State College
The Nature Conservancy Canada
The Vermont Chapter of The Nature Conservancy

Newspapers
Addison Independent
Barre Times-Argus
Barton Chronicle
Morrisville News & Citizen
The Appalachian Corridor

Groups contacted that were unresponsive or unwilling to distribute

Newspapers

Québec Chronicle-Telegraph
Stowe Reporter
lapress.ca
Montréal: La Presse
Québec: Le Soleil
Trois-Rivières: Le Nouvelliste
Gatineau / Ottawa: Le Droit
Sherbrooke: La Tribune
Saguenay / Lac-St-Jean: Le Quotidien
Granby: La Voix de l'Est
Brattleboro Reformer
Barre World
Enosburg County Courier
Saint Albans St. Albans Messenger
Saint Johnsbury Caledonian Record
Shelburne Shelburne News
South Burlington Vermont Woman
Waitsfield Valley Reporter

Organizations/Companies
Vermont Association of Snow Travelers (VAST)
Snowmobile Association
VT Fish and Wildlife
Quebec Fish and Wildlife
St. Johnsbury ALFA
Vermont Agency of Agriculture: Food and Markets
Tourism Eastern Township
Stanstead Municipality
Abercorn Municipality
Canadian Legion
Board of Trade Montreal
Board of Trade Sherbrooke
Optimist Club
Nature Quebec
Le Regroupement des organismes de bassins versants du Québec
COVAVAR
OBV Baie Missisquoi
COGESAF
Sherbrooke City Hall
Centre de la Nature du Mont Saint-Hilaire
Vermont Quebec Initiative
Quebec Sherbrooke Church
Patagonia

Ski Mountains
Ski Bromont
Mont-Sainte-Anne
Ski Saint Bruno
Mont Sutton
Mont Glen
Mont Orford
Massif du Sud
Mont Orignal
Sugar Bush
Mad River Glen
Cochran's Ski Area
Stowe
Jay Peak
Burke

Colleges
McGill
Castleton State College
Community College of Vermont
Vermont Technical College
UVM
University of Sherbrooke

Churches
Montpelier Church of Christ
Church of Christ

Rotary Clubs
Newport
St. Johnsbury
St. Albans
Sherbrook

APPENDIX E: Summary Statistics

The following table shows the summary statistics for our survey dataset. The mean value, standard deviation, and minimum and maximum variables are reported in the right-hand columns for each question we asked. For reference, the "mean" refers to the mean variable according to the scale associated with each question in the survey, so a mean value of 3.310 for the variable "age" means that, on a scale of 6 age categories, the mean was 3.31, or around 45-50 years old. For another example, a mean value of 2.87 for the hiking activity question means that, on the scale of 0 days to 100+ days a year, people hike, on average, 10-20 days out of the year.

Table 21. Summary Statistics
For Sample of Vermont and Quebec Residents from April to May 2013

Variable	Mean	SD	Min	Max
Demographics				
Female	0.634	0.483	0	1
Annual Household Income	3.590	1.635	1	7
Education	4.060	1.092	1	5
Age	3.310	1.498	1	6
Parental/Marital Status				
w/ Children	0.514	0.501	0	1
Married	0.619	0.487	0	1
Residence				
Rural	0.583	0.494	0	1
Suburban	0.157	0.365	0	1
Urban	0.259	0.439	0	1
Canada	0.376	0.486	0	1
Occupations				
Indoor (Private)	0.148	0.356	0	1
Indoor (Public)	0.468	0.500	0	1
Artist	0.023	0.151	0	1
Student	0.097	0.297	0	1
Unemployed	0.019	0.135	0	1
Retired	0.065	0.247	0	1
Connection Variables				
Your Town/City	5.570	1.361	1	7
Vermont	5.024	2.191	1	7
Quebec	3.941	2.209	1	7
Northern Appalachian/Acadian Ecoregion	2.630	1.841	1	7
St. Lawrence Valley Ecoregion	2.712	1.789	1	7
Lake Champlain Ecoregion	3.824	1.978	1	7
Southern Mountains	2.138	1.498	1	7
Green Mountains	4.863	1.953	1	7
New England	4.720	2.101	1	7
Eastern Canada	2.728	1.765	1	7
USA	4.308	2.003	1	7
Canada	3.305	1.808	1	7
North America	4.370	1.564	1	7
Activity Variables				
Personal Reflection	3.210	1.367	1	5
Hiking	2.877	0.894	1	5
Running/Walking Outside	4.066	0.998	1	5
Camping	2.005	0.755	1	5
Walking a pet	2.263	1.624	1	5
Playing in fields/parks	2.203	0.960	1	5
Swimming/playing in creeks, lakes, oceans, etc	2.629	0.857	1	5
Skiing / Snowshoeing	2.486	0.931	1	5
Biking	2.565	1.171	1	5
Canoeing, kayaking, rafting, or sailing	2.019	0.839	1	5
Farming/gardening	2.775	1.123	1	5

Variable	Mean	SD	Min	Max
Sports	1.669	0.393	1	2.8
Casual Activities	2.504	0.554	1.222	4
Resource Collection	1.500	0.417	1	3.444
Travel Variables				
Travel	3.493	1.903	1	8
Border	0.860	0.348	0	1
Attitude Variables				
Human innovation will ensure that we do not make the earth unlivable	3.555	1.688	1	7
Humans are severely abusing the environment	6.149	1.179	1	7
Plants and animals have as much right as humans to exist	6.028	1.268	1	7
Environmental crises have been greatly exaggerated by the media and politicians	1.986	1.351	1	7
I'm sympathetic with the efforts of conservation organizations	6.237	1.154	1	7
The natural environment has a never-ending supply of resources and should be used as necessary	1.631	1.241	1	7
I think endangerment of certain species is an important issue	6.070	1.263	1	7
I would only support a conservation initiative if I would personally benefit from it	1.866	1.285	1	7
Having access to undeveloped/natural areas is important to me	6.282	1.406	1	7
Overall Environmental Attitudes	5.956	0.755	1	7
Action Variables				
I recycle	6.810	0.644	2	7
I walk, bike and carpool whenever I can	5.572	1.624	1	7
I try to drive less by using public transportation	3.385	2.140	1	7
I regularly donate money to environmentally-related NGOs	3.734	1.979	1	7
I try to purchase organic/local food and products	5.512	1.531	1	7
I consider energy-efficient models when purchasing new appliances and/or vehicles	6.056	1.281	1	7
I vote for political candidates based on their environment record	5.470	1.472	1	7
I consider environmental concerns to be an important political issue	6.245	1.104	1	7
Overall Environmental Actions	5.337	0.911	1.375	7
View on Conservation				
…protect my source of income/livelihood	4.560	1.799	1	7
...protect the natural environment and biodiversity	6.538	0.985	1	7
...protect the environment for society's use/recreation	6.367	1.073	1	7
...should not be a priority	1.545	1.383	1	7

Notes: variables on gender, parental and marital status, residence, border and occupation categories are dummy variables and the mean represents their percentages in each category.